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# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request.

Entered as second-class matter at Postoffice at Raleigh, N. C., under Act of July 16, 1894.

Published monthly at the office of the Secretary of the Board, Raleigh, N. C.

Vol. XXXVII

JANUARY, 1922

No. 1

(nos 8, 9, 10, 11 of this vol. were  
not issued)



Teacher Giving Tooth Brush Drill

*"A clean tooth never decays." Take care of the teeth of the children, and when they grow up into manhood and womanhood such care will repay them a thousandfold. Neglect of the teeth, on the other hand, means frequently serious impairment of health.*

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The State Board of Health has available for distribution without charge special literature on the following subjects. Ask for any that you may be interested in.

WHOOPIING-COUGH  
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TUBERCULOSIS LAWS  
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TYPHOID PLACARDS  
TUBERCULOSIS PLACARDS

CLEAN-UP PLACARDS  
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TYPHOID FEVER  
DIPHTHERIA  
PELLAGRA  
CONSTIPATION  
INDIGESTION  
VENEREAL DISEASES  
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### FOR EXPECTANT MOTHERS

Rose M. Ehrenfeld, R.N., director of the Bureau of Public Health Nursing and Infant Hygiene, has prepared a series of monthly letters of advice for expectant mothers. These letters have been approved by the medical profession. They explain simply the care that should be taken during pregnancy and confinement, and have proved most helpful to a large number of women. If you want them for yourself or a friend send name to the State Board of Health, and give approximate date of expected confinement.

### THE HEALTH BULLETIN

The Health Bulletin is sent monthly without charge to all persons in the State who care to receive it. If you have friends or neighbors who will be interested, suggest that they write the State Board of Health, asking for The Bulletin each month. When you have finished with your copy, give it to some one else, thereby increasing its usefulness.

## RELATION OF STATE AND COUNTY IN PUBLIC HEALTH WORK

By Dr. W. S. Rankin

### GENERAL PRINCIPLES

The powers and duties of the state are constitutional; the powers and duties of the county are all other functions of government not delegated to the state. Just as an individual is averse to yielding supervision and direction to some other individual or social group, so counties yield to the states the power of supervision and direction over their local affairs with considerable reluctance; moreover, let it be kept in mind that these larger supervisory powers of the state over the county are granted by persons elected by the individual counties and not by persons elected at large by the state. The counties control the state and not the reverse; the county is the master and the state is the servant.

### FUNCTIONS OF THE STATE

The larger and more important functions of the state may be expressed under two subdivisions: First the state should deal with those problems of general interest which either in character or in cost of handling are such that the individual counties cannot undertake. Among such problems may be listed: (1) fixing and equalizing taxes; (2) operating the courts; (3) maintaining and supervising a system of popular education; (4) protecting and developing the natural resources of the state, such as agriculture, forestry, water power, and manufacturing; (5) building and maintaining a state system of highways; (6) caring for the defective and the delinquent; and (7) preserving and promoting the public health. Second, the state should discover, formulate, advocate and secure the adoption of standard methods of efficient administrative procedure. This purpose results from the opportunity which the central agency of government has, through its general point of view and through its extensive knowledge of various methods of procedure in operation in the different counties, to differentiate efficient from inefficient methods. In this way the state becomes a clearing house of information for the counties in improving their local administration. So it is that the state acquires a leadership which, properly developed, should constitute one of its larger purposes.



## LIMITATIONS OF THE STATE

The state has no powers except those delegated to it by the counties through their representatives. The counties have reserved for themselves the right of administering their internal affairs, among which may be enumerated: (1) maintaining the county roads which do not form a part of the system of state highways; (2) caring for the poor; (3) maintaining law and order through officers for the arrest and detention of disturbers of the peace; (4) imposing special taxes and collecting the general taxes; (5) supervising the schools; (6) conducting elections; and (7) improving local health conditions.

## RELATION OF STATE TO COUNTY

Of course there are many functions of government which are strictly state functions and others which are strictly county functions, and, in discussing the relation of state and county, we may leave out of consideration those activities for which administrative responsibility is single and not dual. On the other hand it is obvious that the state and counties have many mutual interests and that there are numerous and closely related, overlapping responsibilities. In dealing with these matters of mutual interest it is important, for the sake of harmony and efficiency, that definitely understood and mutually satisfactory working relations be established. There are two main principles upon which such satisfactory relations may be developed.

The first principle is that of the segregation of responsibilities and activities, as for example: In the levying of taxes it is possible, and it is the practice in many states, to separate the sources of revenue from which the state is to derive funds from those sources of revenue from which the county is to derive its funds; in the building of roads it is possible, and in many states a practice, for the state to build the highways that are more generally used and for the county to build and maintain the highways of less general use, that are constructed more for local purposes.

The second principle for satisfactorily relating state and county activities consists in the establishment by the state of standard practices of administrative procedure, and the development of such standard practices by official machinery or personnel elected and controlled by the county and maintained jointly by local and state funds. Standards of work created by the state should, wherever possible, relate to definite objects to be obtained rather than to budgets to be expended, personnel to be employed, or methods of procedure to be followed. In short, standards should be directed to results; not to methods.

## RELATION OF STATE AND COUNTY IN PUBLIC HEALTH WORK

### State Activities

The state, that is, the federation of counties, is rightly held responsible by all other states and counties for the condition of its death rate. In discharging this responsibility, two main avenues of service lie open:

First, the state should assume those public health activities that can be carried on, practically speaking, only on a state-wide scale and through state administrative machinery. Without entering into a discussion of the more important state-wide public health activities they may be classified and listed as follows:

A. Activities of common interest to all the counties and impracticable of county handling, such as:

1. State supervision over communicable diseases, for the reason that infection and contagion do not respect county boundaries;
2. The registration of births and deaths according to a standard system, for the reason that birth rates and death rates as between counties to have comparative value must be established by uniform practices; and
3. The protection of the purity of streams from which public water supplies are taken, for the reason that many streams flow through several counties before reaching the one or the ones whose citizens make use of such for domestic purposes.

B. Activities which for economic reasons, for rendering unnecessary duplication and multiplication of officials, machinery, and equipment, belong properly to the state, such as:

1. The preparation and publication of educational bulletins pamphlets, and leaflets needed in public health administration, for the reason that the additional expense necessary for each county to prepare and publish such material would be alike unnecessary and extravagant; and
2. Maintenance of common laboratory facilities by the state for the same reason as that for maintaining central common equipment for the preparation of educational equipment.

C. Activities concerned with disease factors of such exceptional importance that the state cannot neglect them at the same time carry the responsibility for a state-wide reduction in death rates, such as:

1. A state policy for dealing with tuberculosis;
2. A state policy for dealing with venereal diseases;
3. A state policy for dealing with the factors of infant mortality; and
4. A state policy for dealing with the common physical defects of school children.

Second, the state in discharging its responsibility for the death rate should make use of its central position and its federated authority to tactfully, progressively, and persistently lead (not drive) the counties to a clearer recognition of their opportunities and responsibilities for local health conditions.

### County Activities

The county can be made to understand that, after the state has gone its full length in dealing with public health conditions by general measures, the county may do much more in a local and more intense manner for the preservation and promotion of its own health conditions—just as the intelligent individual, after both state and county have done all in their power to protect his health, may still do much more for himself than both governments combined. The county should feel the same interest in its death rate and the same responsibility for maintaining a death rate that compares favorably with that of other counties that the state feels in maintaining a favorable comparative state rate.

### MUTUAL HEALTH INTEREST OF STATE AND COUNTY

A reduction in the death rate of a county is an object of mutual interest to both state and county governments. On the one hand, the greater the activities of the county in the reduction of its local death rate the more pronounced will be the reduction of the general death rate of the state; on the other hand, the more efficient the state-wide general measures for improving health conditions, the less the danger of diseases invading a particular county from other counties. It is clear then, that a state reduction in death rates



is achieved through a reduction of local county rates and a reduction by counties is reflected in a lower state rate. The interest of state and county in local health conditions is mutual.

Those who recognize local health work as a matter of mutual interest to both central and local governments will concede the right of the state to use every means to encourage county activity. They will go further. They will take the position that a matter of mutual interest should be developed, dealt with and financed if necessary by both agencies concerned. County health work, then, is a problem calling for the cooperative relation of state and county.

As pointed out in the general discussion of the relation of state and county, it is always best, where possible, for the fields of activity of two governments to be clearly defined. This means, when the nature of the work permits, a separation of activities. In local health work, however, the nature of the work is such as not to permit of the principle of separate or segregated duties, and, as likewise pointed out, in such cases it falls to the lot of the central government to develop standard plans to assist and encourage, not direct, the local governments in their execution.

## COOPERATION STATE AND COUNTY IN HEALTH WORK

### THE OLD PLAN

#### Cooperation Based on Prospective Service

The State Board of Health, in their meeting held recently in Raleigh, adopted resolutions which make an important change in the relation between the State Board of Health and county health departments. This change is designed to more adequately insure the wise expenditure of funds by both the State and counties in public health work which is of mutual interest to both State and county and which is carried on largely through county officers. This change is also designed to develop a larger degree of local interest, responsibility, and control in public health matters. The alteration in policy represents the product of some ten years' experience on the part of the Board in dealing with local health problems, and the Board feels that in this new policy it has completed the foundation for efficient local health service.

This new relation of State to county in public health work is believed to be of such a character and importance that the public will find the following statement by Dr. W. S. Rankin, Secretary of the State Board of Health, interesting reading:

Until within recent months the State Board of Health and county authorities of twenty-two counties have attempted to deal with their local public health problems on budgets representing the pooled financial interests of the counties, the State, and certain allied agencies, namely, the International Health Board, the American Red Cross, and the United States Public Health Service. There have been two general principles of understanding which controlled the expenditure of these budgets. The first principle was that each financial participant should have the right to approve the personnel employed. The

second principle was that the plan of work to be followed should be definitely stated in writing and likewise receive the approval of each of the financial participants.

Under the above plan it was the privilege of any one of the interested agencies, state, county, or allied agency, to nominate the personnel or to propose the plan. In a few instances the counties have nominated their personnel and in every such instance the other participants have approved. In most instances, however, the county authorities have asked the state to find and propose the personnel to be employed, not being able themselves to find satisfactory officials for the available salary. The local authorities have had the right to suggest their own plan of work, but in practically all instances the State has been asked to prepare and submit the plan to be followed, and, except in a very few cases, the plan submitted by the State has been adopted without amendments.

### Disadvantages of Old Plan

The plan of work followed until within recent months appears on its face to be, and, as a matter of fact, is, both reasonable and fairly satisfactory to all parties concerned. However, nothing is permanently satisfactory that can be improved. There are several disadvantages in the former plan of work which, if possible, are to be avoided.

The first disadvantage of the former plan of work was that, as a rule, where the local work was a failure the county authorities were in a position to take advantage of the responsibility assumed by the State in having either approved or, as is usually the case, recommended personnel and plan. Local criticism was answered by the statement that the county authorities followed the advice of the State Board of Health. In short, the old plan of work, where the State exercised the right of approval of the personnel and plan, placed the Board of Health in the position of having to accept, or at least having placed upon it, responsibility for most of the failures.

The second disadvantage of the former plan of cooperation with the county was that the subsidy by the State was conditioned very largely upon the establishment of a budget, the creation of an office, and the employment of officers who might or might not carry the mutually agreed upon plan of work into satisfactory execution. The expenditure by the State was based upon office holding over a definite period of time. The State paid for time and not necessarily for service.

The third disadvantage was that the work, being of a scientific and technical character, could not be appraised by the average intelligent citizen, so that it was difficult for those who paid the health officer to know whether or not he was rendering adequate service. Some simpler, more easily understood index of efficiency than that embodied in the old plan was most desirable in order that health officials might be made more responsive to those who can employ them. Some common denominator of service, some expression of value that is intelligent to the average man was needed.

The State Board of Health has, for some time, recognized these disadvantages of their former plan of state and county cooperation, and has been keenly sensitive to the strong sentiment in North Carolina for the very highest possible degree of local government with a minimum of state supervision and direction. For two years the Board has been at work on a few principles of cooperation that: (1) will permit the state to leave entirely to the counties the determination of both personnel and plan and at the same time protect the State from a wasteful expenditure of funds; and (2) will

necessitate the assumption by the local authorities of larger and more definitely fixed responsibilities for the management of their local health problems.

## THE NEW PLAN

### Cooperation Based on Completed Service

There is an old saying to the effect that there are two bad ways in which to pay a debt; one not to pay it; the other to pay it in advance. As a rule the public pays in advance, pays not for service rendered but for service in prospect. Public officers are employed to do certain things. Some do the things for which they are employed and others fail to perform their prospective duties.

The old plan of state and county cooperation in health work, like practically all public service, involved payment in advance of service, that is, an appropriation conditioned on the employment of personnel and the approval of a plan of work which might or might not be carried into effect. The new plan makes the state appropriation for county health work conditioned not on service to be rendered but on service that has been rendered. To do this it is necessary: (a) to analyze carefully the work of county health departments and to break down the general work of these departments into separate, individual, constituent pieces, and (b) to find a figure representing the reasonable cost for the performance of each item.

### Values Difficult But Costs Easily Determined

Note carefully that the effort is not to determine the value of an item of work, but to find a reasonable cost for having it done. Cost and value are terms with very different meanings. Values are difficult to determine, but costs, relatively speaking, are easily determined. To illustrate: It is very difficult to determine the value of vaccinating persons against typhoid fever. Such a determination would involve considerations of (a) the earning capacity of the average person vaccinated, (b) the relative expectancy of the average person vaccinated as against the average unvaccinated person—very difficult factors to estimate. On the other hand, to determine the cost of vaccination it is only necessary to know the sum of money expended for vaccinating a large number of people. If, in a certain county, five thousand persons are vaccinated in a campaign, the total cost of which is two thousand dollars, the cost of each vaccination is  $200,000 \text{ cents} \div 5,000 \text{ persons} = 40\text{c}$  each. If this experience is found to hold for such work generally, then it may be accepted that the average cost for vaccinating against typhoid fever is approximately forty cents. But suppose we have no such basis of experience on which to determine the average cost of a certain item of health work. How then shall we proceed in determining costs? In such a case we have to resort (a) to estimating the time of the officer consumed in the doing of the item, and (b) in determining from the salary paid the official the value of his time which is usually required in the performance of the item. To illustrate: A health officer receives \$3,600 a year as a salary. He works 10 hours a day or 60 hours a week, which is 3120 hours a year. By dividing his total salary by the total number of hours which he gives to public service ( $360,000 \text{ cents} \div 3,120 \text{ hours} = 1.15 \text{ dollars}$ ) we find that the officer receives about \$1.15 per hour. Now, suppose we find further that a particular item of work, the cost equivalent of which we are trying to determine, requires as a rule about an hour or an hour and a quarter. This would mean that the item would be assigned a cost figure of \$1.25 or \$1.50. The presumption that the official



will sacrifice quality of work for quantity of work would be reasonable if it were not possible to carefully define in official regulations, the scope and detail involved in each item and to check the officer's record both as to quantity and specifications.

### PIECE WORK PRINCIPLE APPLIED TO HEALTH WORK

The application of the piece work principle to the work of county health departments is possible when three conditions are fulfilled: (1) a list of established items of local health work; (2) cost figures determined for each item; and (3) a system of records and reports by the local officer provided which will show the number of each item performed for a given period of time. With these conditions complied with, the cost value of a local health officer's work may be arrived at by simply adding his total cost credits. In dividing his total cost credits by his total expenditures (as illustrated in three following paragraphs) for the value of the work performed with the dollar expended is determined.

### THE TEST OF EFFICIENCY

By reducing the work of a number of health officers to this common denominator, the earning on the dollar expended, we may recognize the relative efficiency of the various officers whose work is considered.

This principle of comparison operates regardless of variations in the size of budgets. For example: If a health officer expends \$500 in doing a month's work and performs \$625 worth of work, measured in terms of cost, his earning is \$1.25 on the dollar expended. Again, if a health officer expends \$5,000 during a month and performs \$6,250 worth of work, his earning on the dollar is the same, that is, \$1.25. The principle operates regardless of variations in the sum of expenditures for given periods of time.

And again, the principle of comparison operates regardless of the character of the work performed by different health officers. For example: One health officer may spend his whole time in dealing with items of work which are concerned with the problem of tuberculosis, venereal diseases and contagious diseases; another health officer may spend his entire time on items of work concerned with the problems of malaria, infant hygiene, and contagious diseases, and yet, the work of both of these health officers may be measured in terms of cost credits and the work of each reduced to the amount earned on the dollar expended. There is, in the cost equivalent principle, as applied to health work, a basis for comparing the efficiency of health officers, a basis for promoting or demoting according to the merits of the individual officer, and a principle which operates regardless of variations in budget or of variations in the character of work performed.

### INFLATED OR DEFLATED VALUES MAKE LITTLE DIFFERENCE

Another matter that it is well enough to call attention to in passing is that the standard by which the work of any particular health officer is measured under this scheme, is not the \$1 that he earns on the \$1 expended, but it is the average earning upon the \$1 expended by a number of health officers. For example: Twenty health officers during the month of X averaged an earning of \$1.38 on the \$1 expended. Health officer Y in the county of Z earned \$1.56 on the \$1 expended. In forming an opinion as to the efficiency of health officer Y, we compare his earning of \$1.56 on the \$1 expended, not with the \$1, but with the \$1.38 which was the average earning of the twenty health officers for the month under consideration. Now, keeping in mind the

fact that the standard of comparison is the average earning capacity on the dollar, it is apparent that it makes little difference in the application of the principle whether our system of cost equivalents represent an inflated or a deflated currency. For example: If we double the cost equivalents for the various items, the comparisons of amount earned on the \$1 expended, that is, the relative figures, remain unchanged. Suppose we double the cost equivalents in the illustration given above. Then the average earning capacity of the twenty health officers referred to would be  $\$1.38 \times 2 = \$2.76$ , and the earning of health officer Y of the county of Z would be  $\$1.56 \times 2 = \$3.12$ . It is, therefore, clear that so far as estimating the value of the work of any particular health officer is concerned, it is not important whether the cost figures assigned to the various items are a little too high or a little too low. It would make little difference in our commercial relations whether the yard stick is thirty-six inches or forty inches, or a pound fourteen ounces or eighteen ounces provided everybody bought and sold by the same yard stick and by the same pound. The important thing is the standard.

The first value, then, of the piece work basis, applied to public health administration, is that it affords a means of satisfactorily estimating the relative efficiency of health officers; it gives the voter some way of checking up an official whose work is of such a character, so highly scientific and technical, as not to be susceptible of satisfactory appraisalment by the average man.

#### STATE ASSISTANCE BASED ON SERVICE NOT OFFICE HOLDING

Then, there is this second, and, from the standpoint of state administration, this even greater advantage to be derived from this principle of piece work applied to local health problems: The State can condition its appropriation for county health work upon the county health department's earning a dollar on every dollar expended. The State can pay over to the county the whole amount of the allotment for it, but in case the local administration fails to earn \$1 for each \$1 expended, the State may correspondingly reduce the potential state appropriation for that particular county. For example: A county health department has an annual budget of \$6,000. The State Board of Health conditionally participates in that budget to the extent of \$2,400. This health department should earn, therefore,  $\frac{1}{2}$  of \$6,000 each month. That is to say, measured in terms of costs, the health department should do \$500 worth of work each month. When this is accomplished the State should send its check for 500/6000 or  $\frac{1}{12}$  of its conditional appropriation of \$2,400 to the county, that is, \$200. If, on the other hand, the amount of work performed by the county health department for one month amounted to only \$400 then the State should send its check for 400/6000 or  $\frac{1}{15}$  of its conditional appropriation, that is, a check for \$160 to the county. In short, in the proportion that the local health department fails to earn a dollar's worth of work for every dollar expended so does it lose its subsidy from the State.

With the State's assistance conditioned upon service rendered and not upon the creation of office, the election of officers, and the adoption of plans of work, the State is in a position to entirely relieve the county authorities of the necessity of securing the State's approval of their personnel or plan. The county may elect whoever it please and adopt any sort of a plan that suits it. The State cannot lose its money through the election of inefficient personnel or the adoption of an unwise plan for the State bases its appropriation to the county on services rendered, and not on services to be rendered. In proportion as the county fails to render service, in exactly like proportion does the county fail to receive its subsidy.

## WHY THERE ARE NO EDUCATIONAL ITEMS AND VALUES

There are no cost credits allowed the health officer or nurses for approaching an individual on the street or elsewhere and suggesting to him that he bring his family to the dispensary and have them vaccinated; or for talking to him ten minutes on the subject of vaccination in order to so impress him that he and his family are subsequently vaccinated; or for writing him on the subject of vaccination which results later in his being vaccinated; or for talking to a hundred individuals on the subject of vaccination and persuading a number to be vaccinated; or for writing to several thousand individuals through a newspaper column on the subject of vaccination, but the health officer's pay for all the educational work which he does with the individual, or with the group, or with the mass by explanation, demonstration, conversation, lecture, placard, handbill, newspaper, etc., is the credit allowed him on the EFFECT of his educational effort. If his educational efforts are worth anything, people are vaccinated, parents have their children's adenoids and tonsils removed, people report contagious diseases, people go to the venereal disease dispensary, people make it possible for him to do all of the items of health work for which he is credited. And, if on the other hand, his educational work is relatively worthless, the items of work performed fall off correspondingly. Education is a means and not an end in itself and, in bringing about the ends, items of health work rendered, the educational effort is rewarded in proportion to its efficiency.

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## EQUIPPING A CLINIC WITHOUT COST

By Millard Knowlton, M.D., C.P.H.

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Difficulty in raising several hundred dollars for equipping a clinic need not cause delay in cleaning up a community of syphilis by the treatment of infected patients. This observation is based on a visit to a clinic in Oxford, N. C., on July 22, 1921, where I saw neo-arsphenamine administered to twenty-three patients with equipment that cost \$24.04. After all everything depends upon the personal equation, and the powers behind the Oxford clinic are Dr. J. A. Morris, Health Officer, and Mr. J. R. Jackson, Superintendent of Public Welfare.

Oxford is a town of about 3600 population and is the county seat of Granville County which has a total population of about 26,000, approximately half white and half colored. It happens that Dr. Morris and Mr. Jackson share the same office space in the little courthouse at Oxford and this gives them an opportunity to discuss matters of common interest to the Health and Welfare Departments.

The presence of venereal disease was so frequently noted among cases coming to the attention of the Welfare Officer that he found the welfare interests of the community coincide with the health interests of the community in demanding measures for combating these diseases. As the Health Officer has always realized the importance of such work, it was but natural that the



combination of Health Officer and Welfare Officer working together, both of whom appreciate the damage wrought by venereal diseases and the necessity for combating them, should result in some concrete effort directed to that end. Syphilis was attacked first as that appeared to be the easiest way to get started.

The way the combination works is that the Welfare Officer gets the cases and the Health Officer treats them. For this purpose the combination office occupied by the two men is converted into a treatment room every Friday afternoon while the wide corridor of the courthouse outside the office door is used as a waiting room. A six foot office table with a chair cushion for a pillow is covered with a cloth and used as a treatment table. A small table is cleared of papers and covered with sterile towels upon which the meagre but sufficient supply of instruments and materials are spread. In connection with the use of typhoid vaccine and other public health activities the Health Officer had need for alcohol, tincture of iodine, carbolic acid, a hand wash basin, towels and a sterilizer consisting of a pan of water over an electric heater.

With this equipment already available and utilizing a pair of dressing forceps left over from medical practice days, a few pint bottles for distilled water, a druggist's graduate for dissolving the drug, and a piece of rubber tubing for a tourniquet, the additional equipment actually purchased for administering neo-arsphenamine was very limited. The items are as follows:

One copper still with alcohol heater and with top section adapted for sterilizer .....	\$19.75
One gravity arsphenamine outfit with needle, including parcel post charges .....	4.29
<b>Total.....</b>	<b>\$24.04</b>

It is with this equipment that neo-arsphenamine was administered to twenty-three patients on July 22. On former clinic days the neo-arsphenamine had been administered with a Luer syringe. On the 22d, the new gravity outfit was used for the first time. The twenty-three patients were treated in a little over three hours or at the approximate rate of seven patients per hour.

The twenty-three patients treated were all negroes of whom five came from the country and eighteen from the city of Oxford. All the patients were men. It will be noted that the eighteen negro men residing in Oxford who were treated represent approximately one per cent of the negro population of that city. Assuming an equal distribution of the sexes this would be two per cent of the males or a still higher percentage of the males belonging to the same age group.

Upon inquiring as to the difficulties encountered in getting these men to come for treatment I was told that very little difficulty was experienced in this direction. On the other hand it was necessary to turn down a number of men who applied for treatment and who upon examination did not present evidence warranting a diagnosis of syphilis. The reason for this is that the men taking treatment would tell their friends how much better the treatment made them feel and their friends would apply for shots of "606" whether they had syphilis or not. From this situation one may conjure up the picture of a syphilis clinic in a small town putting up bars to keep patients away from the treatment table until an examination can be made to determine whether or not treatment is needed.

The next step in equipping this clinic which has just begun its work will be the purchase of a syringe for mercury. With this additional outlay the



total cost of equipment will still not exceed \$30.00. Since physicians charge as high as \$25 and even \$50 per dose for administering arsphenamine it does not appear that \$30 for equipment is a very large outlay. Incidentally the twenty-three treatments given on the one day I visited the clinic, if charged for at \$25 per treatment, would have cost the patients \$575 had they been able to pay for this service.

The main point in the whole matter is that the provision of treatment for indigent syphilitics need not depend upon the outlay of large sums for equipment. After all the personal equation is by far the largest factor in the situation. If two or three men willing to work will go about the matter in a commonsense sort of way there is no reason why adequate treatment should not be given to all indigent syphilitics in any town. The main factor of cost is the cost of arsphenamine or neo-arsphenamine, and this drug is furnished by the state.

This clinic at Oxford is a good illustration of the old proverb, "Where there's a will there's a way." The people would profit if officials and medical men of other counties would read this story and then follow the injunction, "Go thou and do likewise."

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## HOME CARE FOR TUBERCULOSIS

By A. W. Snow

While waiting for the completion of the negro division of the Sanatorium for the Treatment of Tuberculosis, which was appropriated for by the last General Assembly, quite a few colored tuberculous patients are building make-shifts and permanent sleeping porches for home treatment.

Sleeping porch No. 1 is occupied by four patients who were diagnosed as tuberculous at the clinic held in Edgecombe County by the North Carolina Tuberculosis Association. The County Public Health Nurse, Miss Clara Ross, is due credit for bringing these people to the clinic and securing examination. After they were diagnosed as actively tuberculous, she was enabled to secure the erection of these sleeping porches and to see that methods were employed to prevent others becoming infected and aid them in taking treatment at home.

Sleeping porch No. 2 is not much to be proud of as an architectural structure but it is far better than allowing the patient to sleep in the kitchen, as was done before the nurse arrived on the scene. This is a two-room house occupied by eight persons, one of whom has active tuberculosis. It has been our experience that an active case of tubercu-

losis, living in such conditions as this will infect four out of five of the other members of the family unless proper precautions are taken.

The first care of the nurse was, therefore, to see that the patient's sleeping quarters were removed from the other members of the family. She merely instructed them to "get some boards and build a shack for the sick girl," and they followed instructions as far as material for building permitted.

Sputum cups for making safe disposal of the sputum are being furnished these patients and every effort is made to teach them the precautions necessary to prevent others becoming infected.

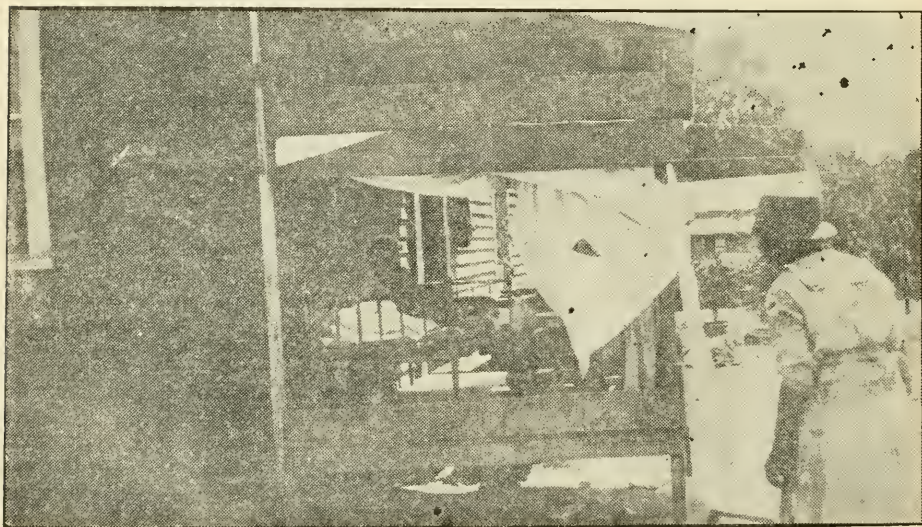
Fresh air and sunshine is Nature's remedy for tuberculosis; this coupled with proper nourishment and rest under the direction of a competent physician will mean restored health if diagnosis is made and treatment begun before the disease is so far advanced as to be incurable.

Sleeping porches are of prime importance in the treatment of tuberculosis. They are good for the tuberculous patient because they aid in the fight back to health and they are good for you because they might mean the difference between health and sickness.



EDGECOMBE SLEEPING PORCH

Sleeping porch occupied by four people—father, mother and two children—three of whom were diagnosed as having tuberculosis. County nurse was instrumental in having examinations made but not in planning porch, which was built for nine-year-old before four-year-old and mother were diagnosed at State clinic.



ANOTHER SLEEPING PORCH

In Edgecombe County, sleeping porch built as an addition to two-room house already housing six when a tuberculous woman and her child were added to the family. Nurse found patient sleeping in kitchen. Three days later she occupied this porch.



## THE GATEWAY TO HEALTH

By C. J. Johnson, D.D.S.

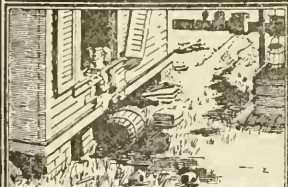
Good habits are best established in early life, and this law may be applied beneficially in care of the child's teeth. The child is the foundation upon which a nation is built. The progress of nations depends on the health standard of the child. We can't expect as much of the future men and women of this age of defects if we ignore the developing age. The great call to-day is for strong men and women. Defects should be sought, and means to remedy, studied. They should be strong and healthy in body during the developing age to make strong men and women mentally, morally. I believe one of the hardest problems confronting education to-day is the backward child. There is generally some cause for backwardness in the work of the school child, and I believe the larger per cent is from broken down decayed and permanent teeth of which home conditions and habits play a big part. We find a great number physical wrecks, and we so often hear it said they will outgrow their trouble. In some cases we do see a marked improvement in the child after they have started to grow, but what the child might have been if they had not had the several years of standstill? It stands to reason that a child during its developing age should have nothing to retard its progress in grasping things to cultivate, and make a full grown developed brain. Can that be done from a weakened, poisoned body? I have asked teachers in different schools about some child I happened to notice far below the standard physically, and they would invariably tell me the child wasn't making any progress, and was a repeater every year. Upon examination of his teeth 95 per cent would be defective. In some of these cases there is lack of encouragement, and in great many lack of proper knowledge of oral hygiene which so many teachers so woefully neglect in teaching. It is

very clear we can't do too much for children with defects of which our country's success depends on future generations to make it foremost of all others. The most important of all is before school age is reached. To be successful in school the child should enter strong in body, mind and spirit. The proper foundation is the keystone to success, and children failing to get it in the early stages of school life are handicapped throughout life's journey. School teachers should learn more the importance of giving instructions in oral hygiene, and advising children of having their teeth attended to by competent dentists. Lack of this will cause a great many sub-normal children, which not only causes more work for the teacher but holds others back in their progress, which causes loss of interest and fail to get all they need in equipment for life's work. And I believe a majority of these sub-normal cases could be made normal if taken in time even before they begin school.

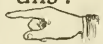
We have thousands in our State who have reached their teens as well as maturity who never have owned a tooth brush nor have ever been inside a dentist's office. What more can we expect of men and women broken down physically and mentally before they reach the prime of life? The mouth is the gateway to health, and if we fail to start in time to keep it in the best possible healthy condition we can expect nothing else. So it behooves the parents, health departments, and teachers of the various schools to teach and train the children the importance of oral hygiene that they may grow up strong physically and mentally; that they may have children they can teach to observe the laws of "Health and Hygiene," and make them fit subjects to perform the duties as strong men and women that will reflect credit on their parents, schools and State.

# CLEAN UP!

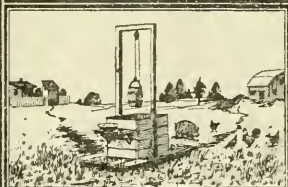
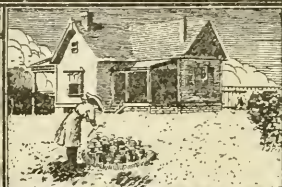
"Cleanliness Is Next To Godliness"



Does your  
Back Yard  
look  
like  
this?



Or  
like  
this?



Open-top  
Wells  
admit  
Filth and  
Drainage.



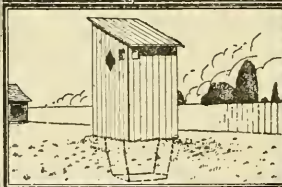
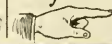
Use a Pump  
with cement top  
and have all  
drainage away  
from your well.



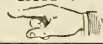
Is  
your Privy  
a  
Disease  
Spreader?



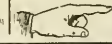
Is it Fly-  
tight, placed  
over a Pit &  
100 yards  
from your well?



Does your  
Kitchen  
look  
like  
this?



Or  
is it  
Screened  
Clean &  
Convenient?



Dirty,  
Dusty,  
Living Rooms  
cause  
Poor Health



Keep  
the House  
Clean  
Screened &  
Comfortable.



Do you  
buy  
Food  
from stores  
like this?

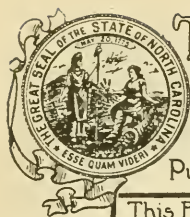


Or  
do you  
buy  
only  
Clean Food?



## KEEP CLEAN

State Board of Health, Raleigh, N.C.



# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request.

*Entered as second-class matter at Postoffice at Raleigh, N. C., under Act of July 16, 1894*

*Published monthly at the office of the Secretary of the Board, Raleigh, N. C.*

Vol. XXXVII

FEBRUARY, 1922

No. 2



MAJOR GENERAL WILLIAM C. GORGAS



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The State Board of Health has available for distribution without charge special literature on the following subjects. Ask for any that you may be interested in.

WHOOPING-COUGH  
HOOKWORM DISEASE  
PUBLIC HEALTH LAWS  
TUBERCULOSIS LAWS  
TUBERCULOSIS  
SCARLET FEVER  
INFANTILE PARALYSIS  
CARE OF THE BABY  
FLY PLACARDS  
TYPHOID PLACARDS  
TUBERCULOSIS PLACARDS

CLEAN-UP PLACARDS  
DON'T SPIT PLACARDS  
SANITARY PRIVIES  
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EYES  
FLIES  
COLDS  
TEETH  
CANCER  
PRE-NATAL CARE  
MALARIA

SMALLPOX  
ADENOIDS  
MEASLES  
GERMAN MEASLES  
TYPHOID FEVER  
DIPHTHERIA  
PELLAGRA  
CONSTIPATION  
INDIGESTION  
VENEREAL DISEASES  
CATARRH

### FOR EXPECTANT MOTHERS

Rose M. Ehrenfeld, R.N., director of the Bureau of Public Health Nursing and Infant Hygiene, has prepared a series of monthly letters of advice for expectant mothers. These letters have been approved by the medical profession. They explain simply the care that should be taken during pregnancy and confinement, and have proved most helpful to a large number of women. If you want them for yourself or a friend send name to the State Board of Health, and give approximate date of expected confinement.

### THE HEALTH BULLETIN

The Health Bulletin is sent monthly without charge to all persons in the State who care to receive it. If you have friends or neighbors who will be interested, suggest that they write the State Board of Health, asking for The Bulletin each month. When you have finished with your copy, give it to some one else, thereby increasing its usefulness.

## THE GORGAS MEMORIAL

By W. S. Rankin, M.D.

A world-wide campaign is being organized and carried on for the purpose of establishing a memorial to William Crawford Gorgas. General Gorgas was born in Alabama, was educated a physician, enlisted in the army and rose to the rank of Major General, did notable work in disease prevention in Havana and Panama, and through that work rendered a lasting service to all humanity.

The work of Gorgas takes on world-wide character through two inevitable effects which it has had and will continue to have. In the first place, General Gorgas demonstrated the possibilities of man's control over disease and death in reducing the death rate of the Canal Zone from sixty-four to sixteen per thousand population. He demonstrated to all the civilized world a new meaning of that primary commission to man, "He shall have dominion." Perhaps more than any other man he transformed the theory of prevention into the outstanding fact of prevention. His clear-cut demonstration of man's power to control disease and, therefore, man's responsibility for uncontrolled disease, has had an influence in all the civilized world, in the United States, here in North Carolina, of developing greater support for public health work, of enlarging public health appropriations, of accelerating death rate reduction. So it is that the work which he did in Panama is local only in the place where the work was performed; in

effect the work is world-wide. In the second place, General Gorgas rendered the whole world a service in making possible the extension of civilization to tropical lands. He opened the tropics to the white man. He annexed to the arable lands of the world the world's most fertile fields, great productive areas where crop may follow crop without seasonal interruption. So the work of Gorgas has made more abundant the clothing and food supply not of the tropics alone, but of the whole world, for steam and electricity transform local abundance into general distribution. Of course we speak somewhat in terms of futurity, but as the countries and as the world counts time the future realization of the influence of Gorgas on food and clothing is not so very distant, not over twenty-five or fifty years. High authority has pointed out that while the United States is at present an exporting nation, shipping food and clothing to others, that in the course of twenty-five years our country will become an importing nation. Certain it is that in no distant time we shall need more food and shelter for our larger population than we can produce in our own country, and at that time with the tropics opened and productive, made possible through the work of Gorgas, we shall begin to realize anew the world-wide character of his work.

The name of Gorgas in world thought will probably be associated



with that of Pasteur, and perhaps in the mind of his country will come to occupy a position similar to that of Pasteur in France. A few years ago one of the large Parisian papers took a vote of the French people as to who was the greatest Frenchman. Pasteur led the list, outranking the great Napoleon. The French remembered that it was Pasteur who found the cause and the remedy for acid fermentation of wines and saved that great industry of the country; that it was Pasteur that discovered the cause and remedy for a disease of the silk-worm that was destroying the silk-worm industry of France as the boll weevil threatens the cotton industry of this country; that it was Pasteur who laid the foundation for disease prevention and made possible the work of Lister in establishing antiseptic surgery. In short, where Napoleon had destroyed thousands of lives, Pasteur had saved tens of thousands. It is the constructive forces of the world that last. Gorgas did a great creative work, work which in character gives the doer of it even to the imperfections of mortal vision something of the likeness of Him whose primary attribute is that of creation. So his work will last.

for it partakes of the essence of that which is permanent.

A memorial to the man and his work will help to preserve, perpetuate, and extend his influence. And let us remember here that a memorial is something for the living, not for the dead. It is an expression of gratitude on the part of the individual, on the part of a people, for some great service and noble example, and the effect of such expression is to keep the example alive in the heart. To keep its influence active in the inspiration and shaping of character. The form of the memorial to General Gorgas is such as not only to keep alive the memory of the man and his work as might be done with a marble shaft, but also to continue and to expand the great interest of his heart—the prevention of disease and death in the tropical world and the opening up of that world to all the possibilities of civilization, economical, mental, and spiritual.

The proposed memorial is an object in which every good citizen, certainly all those whose interest reaches beyond their own epidermis, their own front gate, their own town limits, their own state borders, should have an interest and take a part.

## GORGAS—REDEEMER OF THE TROPICS

By John Bassett Moore

Judge of the Permanent Court of International Justice  
(Reprinted from *The American Review of Reviews*.)

I have often told the story of how, more than ten years ago, during the building of the Inter-oceanic Canal, when the Culebra cut was still a problem and the Gatun dam was incomplete, I found myself one day in the Tivoli Hotel on the Isthmus of Panama. I was on the last lap of a long journey, in which I had visited many countries and traversed many seas, and, palled by the flatness or frenzied by the sparkle, as the case might be, of perhaps more than fifty-seven well-advertised varieties of mineral beverages. I longed for a

glass of plain fresh water. Seating myself at a table I seized a carafe and, as I filled a tumbler, inquired of a waiter whether the contents could safely be drunk. The waiter, with a tone of proud assurance, replied: "Sir, that water is certified by Dr. Gorgas."

Never did words carry a greater import. In a region whose name had been a synonym of pestilence and death, the connection of the two great oceans by the Panama Canal, often called the dream of the ages, was then in course of prompt and

confident realization. The jungle had been robbed of its terrors, and in place of the "reeking miasma" that had formerly risen from the softened ground the hills and valleys were swept with salubrious airs, in which men worked with security and comfort. This marvelous transformation had been wrought by the genius and devotion of one man, William Crawford Gorgas, Surgeon General of the United States Army, and it may be said that while the Panama Canal stands today as a monument to Goethals and his associates, it was Gorgas, the Redeemer of the Tropics, who made possible its safe and humane construction.

Gorgas's achievement at Panama was, however, only a culminating point in a continuous life-work which, far from ending on the Isthmus, was incessantly carried on, without abatement of energy or of aspiration, to the day of his death. He died in harness; and it now remains for a grateful world, instructed in the beneficence of his labors, to provide for their perpetuation and development through all time.

Imbued with this sentiment, it was the happy fortune of Dr. Belisario Porras, President of the Republic of Panama, and an intimate friend of Gorgas, to initiate a movement for the creation of a unique memorial, which should at once symbolize the life-work of the great world physician, and permanently extend its benefits to all parts of the globe. This was nothing less than the establishment at the City of Panama of an institution to be known as the Gorgas Memorial Institute of Tropical and Preventive Medicine. This proposal was doubly felicitous, for, while the memorial is to be associated with the scene of Gorgas's most notable triumph, the installation of the scientific laboratories, not only in the heart of the tropics, but also on the line of the interoceanic canal, is conceived to be ideal from the point of view of combined practical convenience and scientific effectiveness.

### Opening Tropical Empires

Gorgas's victory over tropical fatality in Panama demonstrated the

possibilities which the Gorgas Memorial Institute will advance to their logical conclusion, opening up for high and diversified industrial development some of the richest parts of the earth, both in the Western and in the Eastern Hemispheres. Under favorable sanitary conditions, this would inevitably result from the pressure of population as well as from the desire for riches. Gorgas himself declared: "I believe that again great tropical empires will be known, such as Egypt and Babylon; that from the period of Panamanian sanitation will be dated the beginning of the great white civilization in these parts."

The scientific laboratories of the Gorgas Memorial Institute, situated at Panama, will afford specialists from all parts of the world an opportunity to conduct researches in tropical and preventive medicine. The institute will also permit a limited number of graduate medical students from American and foreign colleges to specialize in tropical medicine by making investigations in the tropics themselves. Of at least equal importance is the plan of the institute to make practical application of the means of prevention of all diseases through the maintenance of health standards and scientific sanitation. This will lead to the sending of scientific expeditions to such countries as may be afflicted with epidemics of the diseases in the prevention of which the institute will specialize.

### Work in Our Own South

In connection with the Gorgas Memorial Institute at Panama, permanent provision is at the outset to be made in the southern portion of the United States for the training of men and of women who will become workers in the county units of the Southern States health organizations. Up to the present time health and sanitary work in the South has been hampered by the lack of a skilled personnel to carry it on. Men with medical degrees from leading universities have been disinclined to take up work of that kind for the small salaries paid.

With a view to meet the immediate need for county health officers, sanitary engineers, and health nurses possessing a knowledge of Southern problems and of health and sanitary measures, it is proposed to establish the Gorgas School of Sanitation at Tuscaloosa, Alabama. This, the first field extension to the institute, is a very fitting tribute to General Gorgas, who was himself a native of Alabama. His mother was for years the librarian of the University of Alabama, and his sister now holds the same position. The University of Alabama has offered the Gorgas School of Sanitation the use of a building for the beginning of class-work, as well as the free use of all university facilities for the students of the school.

#### Career of General Gorgas

The nature of the plans now in course of fulfillment, for the creation of a memorial which shall at once typify the life of Gorgas and permanently benefit the world, renders peculiarly appropriate a brief sketch of his career, which was so strikingly characterized by the constant effort to do good to his fellow-men.

William Crawford Gorgas was born on October 3, 1854, in Mobile, Alabama. His father, Josiah Gorgas, a graduate of the United States Military Academy, served with distinction during the Civil War as Chief of Ordnance of the Confederacy, residing in that capacity at Richmond, Virginia, and became at the close of the war the vice-chancellor of the University of the South at Sewanee, Tennessee, and later president of the University of Alabama.

In this way it happened that the son, William Crawford, spent part of his boyhood at the Confederate capital, and afterward studied at the University of the South at Sewanee. Subsequently he attended the Bellevue Hospital Medical College, now a part of New York University, and, after a year spent as an interne at Bellevue, he was appointed Assistant Surgeon in the United States Army, with the rank of First Lieutenant. Nothing is known of these earlier

years to presage the dramatic interest of his later career.

It is not many years since our Southern States were every now and then visited with scourges of yellow fever. The epidemic of 1878 is estimated to have cost more than 13,000 lives in the Mississippi Valley alone, together with a loss of more than \$100,000,000. It was in 1882 that Gorgas, in Texas, had his first contact with yellow fever.

#### At Havana in the Spanish War

But it was in Havana in 1898, as a Major in the Medical Corps of the United States Army, during the war with Spain, that he again found himself in a struggle with the dread disease on a large scale. When the United States Army went to Havana in 1898, yellow fever was still thought to be a "filth disease," and no actual method of prevention was known.

"The military authorities [Gorgas wrote] concluded that Havana offered the opportunity that the United States had been awaiting for the past hundred years. Thinking that yellow fever was a filth disease, they believed that if we could eliminate Havana as a focus of infection, the United States would cease to be subject to epidemics. This meant so much to the United States financially and otherwise that the authorities determined to make all other efforts secondary to this sanitary effort.

"By the middle of 1900 I believed that Havana was cleaner than any other city had ever been up to that time, but in spite of all this work and care, yellow fever had been steadily growing worse ever since we had taken possession of the city, and in 1900 there was a greater number of cases than there had been for several years. The Cubans twitted us with the fact that all our cleaning up and expenditure not only had not bettered things, but had even made them worse. They called attention to the fact that the very cleanest and best kept portions of the city were by far the worst sufferers from yellow fever, and the evidence was so startlingly before our eyes that we had to acknowledge the truth of what they



said. The health authorities were at their wits' end. We evidently could not get rid of Havana as a focus of infection by any method we then knew."

#### Discoveries of the Reed Board

Into this settled and seemingly hopeless gloom there soon came a ray of light. The demonstrations of the Reed Board, appointed by the Secretary of War, William Howard Taft, to investigate the cause and the means of transmission of yellow fever were as convincing as they were spectacular, and proved beyond doubt "that the only means by which yellow fever is conveyed from man to man is by the bite of the female *Stegomyia* mosquito; and that this mosquito, to become infected, must suck the blood of the yellow fever patient within the first three days of his disease; that after biting the patient, twelve to twenty days must elapse before the mosquito herself is able to convey the infection; that after the non-immune human being has been bitten by the infected *Stegomyia* mosquito, an incubation period of from three to six days elapses before the man begins to show symptoms of yellow fever; that the disease itself is caused by a parasite, and that the parasite is sub-microscopic."

Gorgas, who was then Chief Sanitary Officer of Havana, immediately grappled with the problem of the practical application of the discoveries of the Reed Board. Vaccination was first tried, but its inefficacy was soon demonstrated. Gorgas then proceeded to screen private homes and hospitals so as to prevent the mosquito from biting anyone afflicted with yellow fever, besides fumigating the entire vicinity wherever the fever developed. Following this, he attacked the mosquitoes themselves, destroying their breeding places and killing them in the larval stage by pouring oil on all bodies of water, from the backyard pools and the puddles in the gutters upon the roofs to the large lakes and ponds. For the ten years preceding the American occupation of Havana there had been more than 5,000 deaths per year from

yellow fever. In February, 1901, Gorgas inaugurated his sanitary measures, with the result that the plague rapidly disappeared, the last case occurring in September of the same year.

In addition to the campaign against the yellow fever mosquito, Gorgas directed equally effective attacks on the *Anopheles* mosquito, which was the cause of malaria. Prior to 1901 Havana averaged 300 to 500 deaths per year from malaria, but from that time on the number sharply declined, until in 1912 only four deaths from malaria occurred in the city.

#### Cleaning Up the Canal Zone

It was but natural that the United States Government, recognizing the great work of Gorgas in Havana in stamping out yellow fever and malaria, should place him in charge of the sanitation of the Canal Zone. When in the middle of the last century the Panama railway was constructed, it was commonly said that the laying of every cross-tie cost a human life. The fundamental relation of sanitation to the digging of the canal can best be understood when it is realized that the French in their earlier attempt to build it lost each year about one-third of their white force by deaths from yellow fever.

It was the loss of life rather than lack of skill, of machinery or of money, that brought disaster to their efforts. If under the American administration the same ratio of loss by disease had occurred, it is estimated that this would have meant the loss of approximately 3,500 American lives a year, the effect of which on public sentiment and the progress and eventual completion of the work can only be conjectured. Gorgas keenly realized the great responsibility of his assignment as Chief Sanitary Officer of the Canal Zone. As Frederic J. Haskin has well said: "Not mountains to be leveled, nor wild rivers to be tamed, nor yet titanic machinery to be installed, presented the gravest obstacles to the canal builders. Their most feared enemies were none of these, but the

swarm of mosquitoes that bred in myriads in every lake, in every tiny pool, in every clump of weeds on the rain-soaked, steaming tropical land. Each mosquito was a messenger of death. The buzzing, biting pests had defeated the French in Panama without the French ever having recognized the source of the attack."

Fully understanding the situation, Gorgas planned accordingly. He divided the Zone into twenty-six sanitary districts, each in charge of a sanitary inspector having from twenty to one hundred laborers with the necessary foremen. The well-known Gorgas system of sanitation was then applied to eliminate the breeding places of mosquitoes; and by the autumn of 1905 he had completely stamped out yellow fever and subdued malaria in Panama.

The ridding of the Canal Zone of yellow fever and malaria will be recorded for all time as an epoch in the annals of preventive medicine. Taking for comparison the previous French death rate, the work of the Sanitary Department under Gorgas during the building of the canal may be said to have saved 71,370 human lives, while the financial saving to the Government of the United States in keeping the American forces well and fit for duty is estimated at more than \$39,000,000.

But to the far-seeing mind of Gorgas, the great significance of these two factors, immediately important as they were, lay in the fact that even in the Canal Zone, for centuries reputed to be one of the world's worst pest-holes, yellow fever had been completely crushed and malaria placed in subjection; and that it had beyond all doubt been demonstrated that tropical diseases could be prevented or controlled, and that it lay within the reach of governments to assure the health and prosperity of the vast tropical lands in Central and South America, by the application of sanitary methods such as he had used at Havana and at Panama.

#### Exterminating Disease the World Over

The story of the life of Gorgas reveals how step by step each achieve-

ment led him on to a greater one. Following up his triumph at Havana he made an even greater conquest of disease at Panama. This accomplished, he advanced to the problem of extirpating yellow fever everywhere. Nor were his activities confined to this object. His reputation was world-wide, and he had become an international figure. While still Chief Sanitary Officer at Panama, he was invited to advise and assist various countries and their governments in matters of sanitation. In of Mines of Johannesburg, he went 1913, at the request of the Chamber to South Africa to investigate the cause of the high pneumonia rate in the Witwatersrand mines; and it was there that he received notice that he had been made Surgeon General of the United States Army. In 1912 and 1913, on the request of the Ecuadorean Government, and again in 1916, as a member of the Commission of the International Health Board of the Rockefeller Foundation, he conducted the campaign against yellow fever in Ecuador.

As Surgeon General of the Army, when the United States entered the World War, Gorgas had direct charge of the health of all our troops, and it thus fell to him to organize the Medical Department of the Army into a body that could efficiently care for the health of more than four million men. To this end he associated with him men of prominence in the medical profession throughout the United States, and with their co-operation there was created the splendid medical organization which cared for our sick and wounded in France, as well as for the recruits in the training camps in the United States.

He retired from the Army in 1918; and he then associated himself with the International Health Board of the Rockefeller Foundation to take charge of the yellow fever work, and prosecute his plan for the complete extinction of that disease.

#### A Citizen of the World

Gorgas died in London on July 4, 1920, in the midst of his labors, while on the way to the West Coast of Africa. The King of England had

expressed a desire to grant him a decoration in recognition of his great work, and hearing of his illness came personally to his bedside and there bestowed upon him the Cross and Star of Knight Commander of the Order of St. Michael and St. George.

Other nations had previously paid him their tributes. France had made him Commander of the Legion of Honor, and the King of Italy had awarded him the Grand Cross of the Order of the Crown of Italy. He was also the recipient of honors from leading universities, both at home and abroad, holding some eight degrees of Doctor of Science and five of Doctor of Laws. He was furthermore awarded, because of his particularly eminent services to humanity, a number of special medals, including the Mary Kindsley Medal of the Liverpool School of Tropical Medicine, the medal of the National Academy of Sciences, the Damson Medal of the University of the South, the Buchanan Medal of the Royal Sanitary Institute, London, and the Harbin Medal of the Royal Institute of Public Health, London.

But Gorgas is not to be remembered for his scientific accomplishments alone. As a man, he equally commands our admiration and respect. A quiet and modest demeanor attested his unassuming greatness, while his ever-ready kindness bespoke the warmth of his human sympathy.

Newton D. Baker, former Secretary of War, well expressed the sentiment of many when he said that it was appropriate that Gorgas should die on foreign soil, for he had truly become a citizen of the world.

#### Function of the Memorial Institute

Gorgas's life-work is not of the kind that can perish. Its results are destined to endure and to grow. It rests with men and women of humane and generous impulses, of imagination and vision, in all climes, to see to it that this is so. In the Gorgas Memorial Institute of Tropical and Preventive Medicine we see a noble and confident initiative, reassuring and full of promise. Its benefits are to be extended to all countries.

Through President Porras, the Republic of Panama, in testimony of its gratitude, has offered the funds for a building and necessary equipment. The institute has already been incorporated in the United States, under the laws of the State of Delaware, the incorporators being: President, Rear Admiral W. C. Braisted, Surgeon General U. S. Navy (Retired); vice-president, Dr. Franklin H. Martin, Director General American College of Surgeons; directors, Dr. Belisario Porras, President of the Republic of Panama; Dr. J. B. Boyd, Director of the Medical Service, Santo Tomas Hospital, Panama; Dr. Frank Billings, Secretary Board of Trustees, American Medical Association; Surgeon General Hugh S. Cummings, U. S. Public Health Service; Dr. Oscar Dowling, Health Officer of the State of Louisiana; Dr. Seale Harris, President of the Southern Medical Association; Surgeon General Merritt W. Ireland, U. S. Army; Honorable John Bassett Moore, Judge of the Permanent Court of International Justice; Dr. Le S. Rowe, Director General of the Pan-American Union; Surgeon General Edward R. Stitt, U. S. Navy; Dr. E. G. Williams, Health Officer of the State of Virginia.

The Board of Directors has chosen Dr. Richard P. Strong as Scientific Director.

The Advisory Board, of which Secretary of State Charles Evans Hughes is a member, consists of the diplomatic representatives of practically all the Central and South American countries affected by tropical diseases, as well as of a number of eminent physicians and surgeons, and of health officers of the United States, acting as committees of the leading medical, surgical and public-health associations.

Through the completion by the Government of Panama, at a cost of \$2,000,000, of the new Santo Tomas Hospital, adjoining the site of the Gorgas Memorial Institute, excellent laboratory facilities will be provided for the beginning of the international work in the very near future, without awaiting the erection of the institute's own building. We have here-



tofore mentioned the generous offer by the University of Alabama of the use of one of its buildings for the Gorgas School of Sanitation at Tuscaloosa. With the raising of the endowment fund required for the maintenance of the Gorgas Memorial Institute and its branches the work will proceed in its entirety, and it is expected that the autumn of 1922 will find most of it in progress.

The importance, both scientific and practical, of the work thus to be undertaken, is universally recognized. The Medical Corps of the United States Army and Navy and the United States Public Health Service have given assurance of their active participation and co-operation. Harvard and other leading universities of the

United States interested in the prevention of tropical diseases have expressed a desire to send representatives to aid in research and in the practical application of the scientific principles established. Secretary of State Hughes, in his acceptance of a place on the Advisory Board, expressed the belief that the fulfillment of the institute's great design would materially assist in cementing the friendship of our sister republics. Conceived in the faith that the work to which Gorgas devoted his life is not for a day, but for all time, the Gorgas Memorial Institute of Tropical and Preventive Medicine has accepted as a sacred trust the task of following the trail which he blazoned, its motto being—"health to all people, in all lands."

## NOT BETTER "BABY CONTESTS"—WHY?

By Rose M. Ehrenfeld

Bureau Public Health Nursing and Infant Hygiene, N. C. State Board of Health

We believe better baby contests, initiated some years ago, served their purpose in focusing the limelight on the baby—giving publicity to and stimulating interest in the Infant Hygiene Movement.

When carefully formulated score cards were equally as carefully used, they had an educational value. However, better baby contests appealed largely to mothers of babies least in need of medical observation or attention, as the award was made for the "best baby." Usually, at the close of the day all except the prize-winner had disappointed mothers in whose minds arose many questions. And what of the babies most in need of medical observation? They were not featured on such occasions—probably lucky for the babies escaping the crowd and possibility of contagions, but what of the mother's reaction—should her child not be given a chance because of a slight disadvantage?

For two years the Bureau of Public Health Nursing and Infant Hygiene has discouraged what are commonly known as "baby contests,"

believing the only basis on which we could officially endorse competitive features of this nature would be—

### I. Baby (or child) Improvement Contests.

### II. Better Mothers' Contests.

We cannot encourage the bringing of babies long distances in the summer heat and dust and the offering of a "prize" on an initial weighing for what is sometimes pronounced on such occasions as "a perfect physical specimen," so termed because the height and weight correspond with the standard for a child of that age. We have known of awards being made on such a superficial basis—in some instances the event commercialized or used as advertising feature or drawing card for large public gatherings—the last place children of tender age should be gathered in groups—to crawl and sprawl and bawl—in the limelight.

Recognizing the significance of weight as an index to growth and development, we recommend systematic weighing at regular intervals throughout infancy and childhood for



all children. If there must be competitive events, why not make awards at some future date for normal development or physical progress during a given time? Better to exhibit stunted, puny, undeveloped specimens in a Poor Baby Contest (as the Chicago Department of Health suggests), letting parents learn what standard physical and moral measurements should be. It is the booby prize winners with fellow-rivals we want entered in the race towards better babyhood—and an opportunity of pointing out errors of dressing, feeding, bathing, sleeping, etc., and a chance to later note changes, if any, for better or worse—and why. "Why?" That is the question mothers are now asking—they have passed the primer stage and are ready for a reader.

The Child Health Conference is the substitute we would offer for any type of contest. These to include with the babies the overlooked two- to six-year child, usually in a class by himself, sharing neither benefits of infants nor of school children. Why discriminate? Should any child in North Carolina be neglected?

The general principles of the child health conference are:

I. Non-competitive events.

II. A medical examination by appointment to begin with (eliminating an undesirable wait and needless contact with the crowd).

III. Medical advice of the character that will help mothers to keep well babies well—and

IV. Examination sufficiently thorough to locate causes of retarded progress.

V. Individual instruction of mothers and encouragement to remedy the cause.

Last summer the Bureau of Public Health Nursing and Infant Hygiene co-operated with a few of the counties in holding Child Health Conferences, where examinations were made by health officer or members of local county medical society, using the record card of the U. S. Public Health Service. The absence of a competitive feature proved their value, as many children needing attention

were found and referred to their family physician—some with remedial defects or disabilities that could and should be corrected before the opening of school.

The following five conditions generally recognized as contributing factors to malnourishment among young children give some idea of the extent to which the causes of this particular handicap can be removed by the mother's influence in the home.

### REASONS FOR MALNUTRITION

1. Physical defects, particularly obstructions of the breathing passages. (The removal of these physical defects to make the child "free to gain" should precede the work of the nutrition or health class.)

2. The lack of home control. (This reminds one of Dr. Anna Howard Shaw's quizzical statements that there is just as much obedience in the present age as there was in the old days—only now the process is reversed. It is "Parents, obey your children!" instead of the Bible injunction, "Children, obey your parents!")

3. Over-fatigue, from lack of sleep and other causes. (Over-stimulation, the work required for classes outside of school hours, "movies," nervous excitement of all sorts are quite as disastrous in their effect on the children of the well-to-do families as are the crowded conditions and the noise of tenement homes.)

4. Defective feeding. (Under this head may be put lack of food, improper food, and faulty food habits—that is, eating too fast or under wrong conditions, eating when over-fatigued, etc.)

5. Faulty health habits—for example, insufficient fresh air, lack of cleanliness, too little sunshine, or too little playtime out of doors.

The real purpose of the Child Health Conference is—

1. To stimulate interest in developing permanent local centers, where permanent infant hygiene work may be done (instead of spasmodic efforts), where scales are available for

regular weighings—with health educational exhibit open to the public—where demonstrations in baby and child care may be given and the mothers (also expectant mothers) taught to more intelligently co-operate with physicians in the Infant Hygiene Movement.

2. To locate and place children needing medical attention under the supervision and care of the physician of the parents' preference.

It is in justice to both babies and mothers that we advocate for this year in North Carolina either Child Health Conferences, with examining

physician and the use of U. S. Public Health Service card (which admits of tabulation of findings)—or **Better Mothers' Contests**.

A few of the latter were held by the county public health nurses last year, and their success indicates that North Carolina mothers can be counted on for co-operation. The method of rating described in the following article, "Are You a 100% Mother?" by Dr. W. R. P. Emerson, is what we recommend for determining your rating as a mother.

(The U. S. P. H. S. cards—our mothers' rating cards—will be supplied by this office on request.)

## ARE YOU A 100% MOTHER?

By William R. P. Emerson, M.D.

(Reprinted from *The Woman's Home Companion*.)

A man who has never served in war is scarcely justified in criticizing those who have been at the front. Nor has one who has never been a mother a right to speak of mothers in any way but that of appreciation. The ambition of the normal woman to be an ideal mother is the greatest influence for good that we have.

Although the bond of affection between mother and child is the essential foundation of all child training, it is not the only requisite for success in this matter, for, with the best intentions in the world, everyone knows that there are very important differences in the kind of care given by various types of mothers to their children. It is in this connection that I wish to ask you mothers some frank questions, and to suggest a scale of points by means of which you may determine whether you are succeeding or failing, in the best job in the world.

### I. TWENTY-FIVE PER CENT FOR PHYSICAL CARE

The first question I wish to raise is your attitude toward your child's physical condition. Is he growing up physically and mentally fit? You are quite right in saying that you are ready to do anything in order that

your boy or girl may be strong and well. But just what have you been doing, and what are the next steps to which you have committed yourself in order to accomplish this end?

Have you weighed each of your children to find whether they are up to the standard for their weight? Do not satisfy yourself by carelessly saying, "Oh, he is all right. He's on the go all the time. There's no need to worry about him!"

It must be borne in mind that thus far practically no attention has been given to growth itself. Even the physicians have been chiefly interested in acute and chronic disease after it has developed, and with caring for deformities by means of braces and splints after they are clearly established. It is only since the war that there has been a general awakening to the fact that physical unfitness is associated with malnutrition and retarded growth.

The first thing to do if your child is under weight is to see that he has a thorough physical examination, to determine the cause of his condition. The examination form lists all defects that may be interfering with growth. You should get your family physician to go over each point, and explain to you the indications of ab-

normal physical condition. Do not let a single item escape you.

If the child is a mouth breather, or there are enlarged glands, or other signs of inflammatory processes, let nothing stand in the way of correcting every defect. Do not be one of those mothers who grasp at every excuse for delay, saying, "It will be better to wait until a more convenient time before having the condition corrected"; or, "The summer is a better time, and vacation is only a few months off"; or, "I just can't bear the idea of an operation!" Excuses of this kind are responsible for the continued suffering and ill health of thousands of children in every community.

In considering your rating as a mother, your child's physical condition must be the first consideration, not only for its own sake, but because it is the groundwork and foundation of all other development.

It is part of your duty as an efficient mother to see that the good physical care which your child was given during the days of infancy is continued through the pre-school age and throughout the years of school life, when there is a tendency to focus attention upon other forms of training. No factor in the child's development can be isolated, but his health should claim the mother's first attention.

## II. HOW MANY POINTS FOR HOME CONTROL?

It would not be too much to say that good home control is "half the battle" in the proper nutrition and growth of children; but as I wish to be fair in acknowledging the honest intention of all mothers to do their best in this matter, I am rating this important factor at only twenty-five per cent. In this section let me relate a few incidents out of my experience with mothers and children, and perhaps some of these extreme cases will help you to check yourself up in this regard.

I think it will be unquestioned that the first moral training a child should receive is the duty of obedience. The act is so instinctive in the relations

between mother and child that it might almost be said to be automatic, where the mother has not blindly surrendered her natural authority. Yet I have had a mother say to me when I told her to bring her little son to my office, "I'll bring him if he will come!" He weighed less than forty pounds; she weighed more than one hundred and fifty; but she could not see the absurdity of her position.

The maintenance of the mother's authority depends upon firmness from the earliest years, and upon saying to the child exactly what she means in every case. It is fatal to say, "If you do that again I will punish you," and then fail to do so. The mother who surrenders to the child for the sake of avoiding a fuss, or to secure "peace at any price," not only finds the price steadily advancing, but soon fails to get peace at all.

I frequently ask a mother, "Have you spoiled your child?" And all too often the answer is, "I'm afraid I have." Sometimes this over-indulgence is the result of the illusion that the child is supersensitive, and that nothing must be done to hurt his feelings, even when his best interests are thus sacrificed. Pride in a child may easily lead to the habit of making an exhibit of him. The old idea that "children are to be seen and not heard" was one extreme, but no worse for the child than the present tendency to "feature" him. If you have been spoiling your child, stop it. Begin to exact obedience, and you will be surprised how soon your difficulties will diminish.

## DISCIPLINE BY OTHERS

The mother of a spoiled child is apt to complain about the efforts of others to discipline her child. She accuses her husband of "interfering," instead of backing up the father in his proper assumption of authority. Some mothers think they can capitalize mother-love by leading the children to look to them alone for control.

In one household where the children are my patients, the father has been told to "keep his hands off the children until they are twelve years



old." This mother is very sure of her ability to manage her children alone, yet when her own mother came to pay her a visit she was so exhausted from the lack of discipline in the family that at the end of a week she was obliged to take a room in a hotel, and actually slept through most of the first twenty-four hours from sheer fatigue!

This same resentment against any share in authority over the children is shown in other relations. A servant is often forced to adopt methods for restraining a child which are disastrous to the character, however effective in the immediate result. But this difficulty would be less if nursemaids were selected with due regard to their fitness, and trained to cooperate with the mother's system of discipline.

In one of our large cities an investigation was made to find what became of a large number of girls of limited intelligence, some of whom were actually feeble-minded, who had left school as soon as the law allowed. A large proportion of these girls were found employed by families in comfortable circumstances, where they had charge of little children. In speaking of her nursemaid, one mother said, "I tried to have her help with the dishes, but she broke three times as many as even the cook does, so now she gives all her time to the children." The most important work in the world left to one incompetent to wash dishes!

### GIVE YOUR CHILD RESPONSIBILITY

Next to obedience, the most important point for the child is training in responsibility. All children should have some definite work suited to their ability, for which they should be held strictly to account. Even a toddling child has a natural instinct to help, which should be encouraged if only by teaching him to put away his playthings or to pick up articles dropped. Many mothers say, "It is so much easier to do it myself"; but the child should not be deprived in this way of the satisfaction of achievement.

There are many ways in which growing boys and girls can help in the household tasks. A simple task daily gives a sense of responsibility, and an opportunity for early training in neatness and efficiency. A boy who is given a bicycle can be required to take proper care of it, and will not grow up like the son of one of my patients, who was given an automobile and let it stand outdoors all night with the lights on! Possessions which are bought with money actually earned by the child are usually prized beyond the richest gifts that come without effort!

Back of most of the factors dealing with proper home control stands the question, "Do you allow your feelings to prevail over your judgment?" Is the basis of your control the desire to insure the child's highest development, or are you swayed by the influences and prejudices of your friends and neighbors? For example, do you choose a school for the character of the person in charge, or is your choice dictated by superficial and social reasons?

### III. TWENTY-FIVE POINTS FOR THE DAILY ROUTINE

The 100-per-cent mother follows the daily program of her child with close attention, making a forty-eight-hour list of his activities and occupations, to learn the unnecessary occasions of fatigue. She acquaints herself with even the seemingly unimportant details of his daily life, observes the amount of play and work he is attempting, and realizes the weak points at which friction is most likely to occur. She makes the acquaintance of his teachers, and sees to it that music and language are omitted if he is not able to carry extra studies without losing weight.

The same watchful supervision is exercised over the child's amusements. She must determine what activities are within the range of a reasonable expenditure of energy, and help the child to live within his resources, while exercising his faculties to the fullest extent.

By carefully checking up the child's food and health habits she



will see that he has favorable conditions for growth and a sufficient daily total amount of the right kind of food. Earlier articles have outlined the essential points to be observed in these matters, but it is not easy to keep in mind day after day the importance of eating slowly, avoiding sweets between meals, sleeping with the windows wide open, and breaking away from a book or favorite indoor occupation to get the necessary amount of exercise in the open air.

#### IV. THE BALANCE OF THE SCORE

Character is closely associated with health, for it requires character not only to get well but to keep well. The remaining 25 per cent, therefore, depends upon your answer to the question, "What are you doing to help your child develop high ideals, which are the basis of character building?"

The answer to this question will depend largely upon the quality of your own ideals. Are you keeping your influence, which is the strongest in the life of your child, true to its best possibilities as you see them? One of the finest things repeatedly said by mothers is, "I have a struggle to live up to the ideals of my child."

There are ideals of having a good time, of having one's own way, ideals of dress, and ideals of living up to social requirements. To these ideals the health of thousands of children are offered yearly as a willing sacri-

fice. It requires character to forego pleasures for the sake of health, to resist the tide of social custom, to answer the question: "Jack and Louise do this, why can't I?" It requires character to control the simple habits of eating and drinking, to take rest periods when other children are at play, to observe good hours for sleep. It requires character to plan and follow out a sane, wholesome program for the growing child, instead of following lines of least resistance.

Many parents, in an effort to give their children an "easier" time than they have had themselves, try to shield them from every form of hardship. They forget that many fine qualities are developed in the hard school of experience. Both study and work are necessary to the development of mental and physical power. Shielding children from work makes them weaklings, and shielding them from study makes them simpletons.

Health education, then, furnishes one of the best means for sound character building.

In closing this article I cannot forbear to say that in the task at which I am working—the better care of growing children—the one support that has never failed me has been the interest and patience of the mothers. It has been necessary at times to admonish, to insist, to speak very plainly, but I have met with no resentment, for when this is done in order to get a child well the mother can be counted on to understand.

## HOW TO FIND YOUR RATING

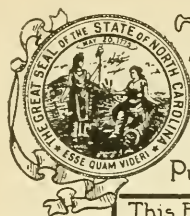
### I. 25 points if your child is "free to gain."

- Deduct five if you do not know whether he is under weight;
- Deduct ten if he is under weight and has not had a complete physical-growth examination;
- Deduct ten if the physical examination showed physical defects, and you have not had them corrected.

### II. 25 points for home control.

- Deduct ten if your child has not been trained to obey;
- Deduct five if you interfere with his proper discipline by others;
- Deduct five if you have not trained him to have a sense of responsibility;
- Deduct five if you allow your feelings to prevail over your judgment.





# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

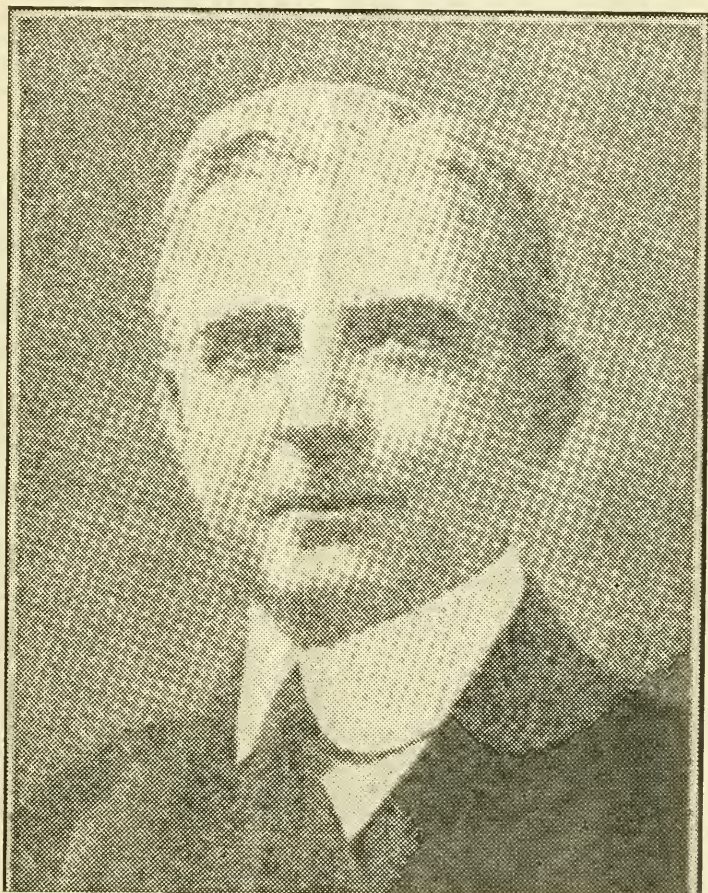
This Bulletin will be sent free to any citizen of the State upon request.

*Entered as second-class matter at Postoffice at Raleigh, N. C., under Act of July 16, 1894.  
Published monthly at the office of the Secretary of the Board, Raleigh, N. C.*

Vol. XXXVII

MARCH, 1922

No. 3



## GOVERNOR MORRISON'S AMBITION

"Some people say that I want to be known as the 'Good Roads Governor of North Carolina.' This is not true. My ambition is to be known—at least for a while—in the traditions of North Carolina as the 'Health Governor.' Good roads are very important, and I hope to see ours the finest system of highways to be found in the Republic; but good roads are not of any account to sick or dead folks. It is much more important to have a healthy population."



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### FREE HEALTH LITERATURE

The State Board of Health has available for distribution without charge special literature on the following subjects. Ask for any that you may be interested in.

WHOOPING-COUGH  
HOOKWORM DISEASE  
PUBLIC HEALTH LAWS  
TUBERCULOSIS LAWS  
TUBERCULOSIS  
SCARLET FEVER  
INFANTILE PARALYSIS  
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MEASLES  
GERMAN MEASLES  
TYPHOID FEVER  
DIPHTHERIA  
PELLAGRA  
CONSTIPATION  
INDIGESTION  
VENEREAL DISEASES  
CATARRH

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### FOR EXPECTANT MOTHERS

The Bureau of Maternity and Infancy has prepared a series of monthly letters of advice for expectant mothers. These letters have been approved by the medical profession. They explain simply the care that should be taken during pregnancy and confinement, and have proved most helpful to a large number of women. If you want them for yourself or a friend, send name to the State Board of Health, and give approximate date of expected confinement.

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### THE HEALTH BULLETIN

The Health Bulletin is sent monthly without charge to all persons in the State who care to receive it. If you have friends or neighbors who will be interested, suggest that they write the State Board of Health, asking for The Bulletin each month. When you have finished with your copy, give it to some one else, thereby increasing its usefulness.



## AN APPEAL TO THE PEOPLE FOR INCREASED FOOD PRODUCTION

By Governor Cameron Morrison.

NORTH CAROLINA has been pushed to a high comparative position among the States of the Union in the production on our farms of money crops for the market; but our whole agricultural life is weakened by the fact that we have neglected the production of sufficient food on the farms of the State to make our agricultural life independent, and give it strength to stand the periodic vicissitudes of misfortune to the money crops, due to slump in prices, or other causes sure to occur. Much improvement has been made in the last few years in this well understood weakness of the State, but there is yet much to be done. It is hard to "get out of a rut."

A highly competent authority declared recently: "There is not a single county in the State in which there is raised enough food in value or quantity for the human and animal life of the county."

### Fight Weevil With Food

Independently of the approach of the boll weevil, this phase of our agricultural life should be strengthened throughout the State; but the approach of the boll weevil threatens a serious blight to a large area of the State, particularly the great areas devoted largely to the growth of cotton. If the boll weevil should have the devastating effect upon the crops

this year in the cotton sections of the State that it has had in some of the States to the south of us, and if the people in the cotton sections of the State do not raise more food supplies for themselves and their animals than they have heretofore raised, it will certainly result in widespread suffering and destitution. This threatened danger and distress can be largely averted, if it comes, as there is reasonable ground to fear it may, and at the same time a policy adopted in the agricultural life of the State which will greatly strengthen the whole life of our people, not only in the cotton sections, but in the entire State.

We must so order our agriculture as not to require the immense outlay of money rendered necessary largely to buy the food upon which the people live who grow money crops in the State for the market. The small farmers and tenants cannot stand the periodic slumps which occur from various causes, and the wealthier men and large landowners cannot withstand the boll weevil blight, if it comes, and feed their tenants and farm laborers through it. Buying our food elsewhere and raising money crops requires too much capital, and is too hazardous for our people to engage in on an extensive scale.

### Departments Co-operating

I have made every effort to excite the interest and active efforts of the State College of Agriculture and Engineering, the Agricultural Department, the Department of Education, and the Health Department of the State government to lead the people to organize and prepare without delay to increase the production of food raised in the State for home consumption, not only in the threatened areas, but in the whole State. These great departments of our State government are splendidly organized and equipped to help the people in this all-important matter, and they are now moving with energy through their splendid organization of expert men to help. I appeal to the people of the whole State for their active co-operation in the movement.

### We Must Increase Our Home Supply of Meat

We cannot raise beef profitably in a large part of the State, but we can raise hogs and poultry of every description on account of our long summer seasons as easily and cheaply as it can be done anywhere in the Union. We must increase our meat supply through hogs and poultry. We can raise vegetables of almost every known variety; and keep and maintain milch cows probably more cheaply than it can be done elsewhere in the Union. If we would but realize the importance of this matter, we could make hog meat, chicken, turkey and other fowl meat, eggs, butter and milk so plentiful in the State, particularly on the farm, that our food bill would be trifling compared to the enormous outlay, with the business hazards accompanying it, which we now annually pay.

Independently of the boll weevil threat, because of the periodic slumps in the prices of cotton and tobacco, now raised at such enormous hazard upon purchased supplies, the State ought to tremendously increase hog and poultry raising, home gardening, and the supply of milk, butter and eggs in the State, not for the purpose of making them our money crops,

but in order to have abundant, wholesome and cheap food, whatever vicissitudes may overtake the money crops; but the approach of the boll weevil makes it absolute folly not to do so.

And further, our illiterate and un-informed people ought to be made more generally aware of the supreme importance to health of the balanced ration, and of an enlightened world's knowledge of the necessity of nutritious and varied foods.

### Appeal to All the People

In furtherance of the foregoing purposes, and in co-operation with the State College of Agriculture and Engineering, the Board of Agriculture, the Department of Health, and the Department of Education, I appeal to the people of the State to have community meetings, and give consideration to this important matter; and to quickly organize for the purpose of promoting a State-wide program for more and better home gardens, a heavy increase of the poultry and eggs and milk and butter supply, and the raising of more hog meat in the State.

We urge the people of the State to a careful study of how to make this increase in food in the State economically, and that they adhere to it, not only during the threat of the boll weevil disaster, but until North Carolina becomes a great food-raising State, independent of the threat of periodic disaster through failure to make profit on the money crops.

I do not think it will be wise for our people generally to undertake at first to raise foodstuffs for the market; they will not be successful at first in making money, and will become discouraged and stop. In course of time, through study and experience, we are quite sure these foods can be raised by our people for the market profitably; but present efforts had best be confined to supplying the family and feeding the labor raising the money crops.

We ought, also, to raise every pound of food necessary for our animals. The annual bill of North Caro-

lina for food purchased elsewhere for our animals is enormous. We must raise it all. It is pure speculation to buy food for men and animals upon which to raise cotton and tobacco in North Carolina. Let us organize and learn how to raise all the food we need to feed the animal life of our State, as well as the people. For

years we have known this would make the State rich and independent, and yet we have failed to do it.

We suggest no new thing, but we are moving with great hope that we can arouse the people to do what they have long known ought to be done.

## THE NATURE OF MILK AS A FOOD

By D. R. Mendenhall, M.D.

MILK is often stated to be a perfect food. By this we mean that it contains all the essential elements for normal human growth and development.

The adequacy of a food or diet depends briefly on its containing:

1. Enough of the right sort of material to build up and repair the living tissues of the body. These body-building substances in the food are called proteins, and are found especially in milk, meat, fish, eggs, and in certain vegetables, especially beans and peas.

2. Enough substances to furnish the required energy of the body. Fats, starches and sugars are the chief energy foods, and are transformed in the body into energy for work and into body-heat.

3. A variety of mineral substances, which are needed in the growth and functioning of the parts of the body, such as the skeleton, the brain, the blood, etc.

4. An adequate amount of certain substances whose nature is not yet fully known, but whose presence in the diet has been demonstrated to affect body growth in animals or man. These substances, known as vitamins, growth determinants, or the unknown dietary factors, are therefore essential elements in our food.

5. No substance poisonous to the average individual nor one which will not allow of normal digestive processes.

In addition, to be properly digested and of the utmost nutritive value, articles of diet must also be of pleas-

ing taste, palatable, and preferably of a consistency and appearance similar to the foods in customary use by the race.

Clean milk fulfills all of these requirements for an adequate food better than any other single foodstuff.

Milk is, then, in a sense, a complete food; if used as a sole food it will sustain life and allow growth. It is used as an exclusive diet for young children, but after infancy supplementary foods need to be included in the diet for the best development. For one reason, milk—which, in respect to all its ingredients, ranks among the most digestible of all animal foods—is so completely digested that there is practically no waste. Though this complete digestibility renders milk one of the most efficient foodstuffs, a certain amount of nondigestible material in the food—so-called roughage—is necessary to regulate the discharges from the digestive tract. For this reason, and for several others, a mixed diet after the first year of life is better than an exclusive milk diet.

Milk has in the curd a protein of a more valuable nature in regard to its ability for building or renewing body tissues than that found in vegetables, or even in meat. There is no other animal protein procurable at so low a price.

Milk as a source of energy, or as a fuel for the body, compares most favorably with other foods. The energy value of a quart of milk is about equivalent to that of a pound of lean meat or to eight eggs. As a source



of energy cereals are, however, far cheaper than either milk, meat or eggs; and, therefore, cereal and milk is the ideal combination of foods to furnish body energy in childhood.

Calcium salts (lime), supplied in our food, are necessary not only for bone formation, but for the development of the important organs of the body, especially the glands of internal secretion.

Of all foodstuffs milk is the cheapest and most abundant source of calcium, and milk also provides other important mineral salts, such as potassium and phosphorus. Therefore, since growth is measured by bone formation, and since the child must have a steady, abundant supply of these essential minerals, milk should be included in every child's diet.

Unfortunately, cow's milk is low in iron content, even as compared with human milk, and this important mineral must be supplied in other foods. The prolonged exclusive use of milk after early infancy tends to produce an anemia from lack of iron in the blood. Iron can best be introduced into the diet through the early use of fruit, vegetables and whole cereals.

The abundance, character and digestibility of its proteins and its large mineral content make milk, as we have shown, a most desirable food; but, after all, the most valuable properties of milk lie in its containing an abundance of the unknown dietary factors—the vitamins which control growth and health. One such substance is found chiefly in milk fat and the organic fat of certain other animals, but is not present in vegetable oils or in pork fat. Eggs and green vegetables, such as spinach and chard, do contain appreciable amounts of this vitamine, but milk is our chief source. The cream of a quart of milk contains as much of this vital substance as is found in all the skim milk left after the cream is removed. A second recognized vitamine is present in all food consumed in their natural state and in sufficient abundance to maintain health. In the manufacturing of purified foodstuffs, such as

the polishing of rice or in the milling of flour, this substance may be lost, and a diet made up entirely of denatured foods may cause disease or even death, due to a deficiency in this essential substance.

A food like milk which, given in moderate amounts, combines enough of both of these vitamins to allow of normal growth and development, has a value in the human dietary greater than that of any other single food.

It is true that appetite in many cases has to be considered, and an exclusive diet of any single food substance becomes distasteful to the large majority of us and tends to lower digestive processes and to cause impaired nutrition. However, this does not mean that the child should be allowed to refuse milk as a substantial part of his daily diet, if the diet includes, as it should, several other forms of food. All normal children are better for at least one and a half pints of milk a day. Poverty, of course, may prevent this amount being provided for every child, but, if her means permit, the mother who does not furnish sufficient milk for her children and train them to drink it is not fulfilling her duty. Healthy children can be made to like a varied diet, to eat what is good for them, and to finish the entire meal provided. Patience, persistence and tact are needed to teach proper food habits to the young, and, to be effective, this discipline must be maintained from birth.

Milk may be given to the child in cooked form, as soup, weak cocoa, or flavored milk-shake. If used as a drink, it should be taken toward the last of the meal, for many children will not take sufficient other food if they fill themselves up first with milk.

Children who have too rich or too abundant diet may seem to do better with less or even without any milk, but here the fault is not primarily the quantity of milk, but the total amount of food. On the other hand, an exclusive milk diet after the first year is ultimately harmful, and milk should not be included in the



diet of the child to such an extent as to prevent the taking of an ordinary amount and variety of food. Many children can take and thrive on

a quart or more of milk a day. Very rarely a child has an idiosyncrasy for milk protein and is made violently ill by milk.

## FOOD AND THE HOME

By Mrs. Jane McKimmon.

**I** ONCE heard a long, lean man say, "I bear in my body now and will to my dying day the marks of having been the thing upon which my wife practiced when she was learning to cook," and as I looked about the audience I thought I could see in other bodies victim after victim who was marked with the results of somebody's ignorance.

Not all the marking was done by bad cooking; something decidedly more appetizing was required to round out those ample waist lines, to put that extra roll on the back of the neck, and to add so many chins to the one nature gave.

The woman who feeds her family the too-common diet of meat and potatoes, rice and bread, pie and coffee, and does not know what food factors this diet lacks, as surely marks her family as does the woman who has little knowledge of how to prepare foods properly.

No matter what other job a woman has, in nine case out of ten the job of feeding the family is thrust upon her.

If she knows the food requirements of the body and how to use what is available, things are easy, she can manage to keep herself in good condition and start the family on the road to health. If she does not know, there is going to be some marking done.

With a cow and a garden the woman on the farm has the most important parts of nourishing meals right at hand.

The city woman can do almost as well with the supervised dairies and her back-yard garden.

People all over the country are eating too much meat, sweets, starch and fat, and it is time to stress the advantage gained by substituting

milk for some of the meat and letting garden vegetables furnish a big part of the daily food provided.

If one is young enough to still be building the body, he will need more building material in the shape of milk, eggs, meat, etc.; but if the body is already built he must be careful that he provides just enough building material for repairs. Any thing over means trouble for the machinery of digestion and elimination.

I wonder how many people who read the yeast advertisements know that the same vitamine heralded there can be found in milk, cereals, vegetables and other foods in a much more palatable form?

Most interesting experiments in nutrition have brought to us a knowledge of what the vitamine does for the body and in what foods it may be found.

For want of a better way of indicating the three vitamins thus far discovered, they are called fat soluble A, water soluble B, and water soluble C.

A and B are the important growth-promoters and are found in many of the same foods.

A is called the antirachitic vitamine, or the preventer of rickets. It is also a specific in certain eye diseases.

B is the antineuritic vitamine, and the lack of it in the diet causes terrible scourges of beri-beri in some parts of the world.

C is the antiscorbutic, or the preventer of scurvy.

Fortunately, these vitamins are found in our common foods. Milk contains all three of them and is particularly high in the growth-promoters, A and B.

It is in the cream of milk that A, the fat soluble, is found, and butter, eggs, the glandular organs of animals (liver, kidneys, etc.) furnish rich sources.

Cod liver oil is said to contain 250 times as much as any other source, and doctors universally administer it in cases of rickets. However, spinach, turnip greens, cabbage, collards, lettuce, string-beans, okra, asparagus and other leafy and succulent vegetables contain the rickets-preventing vitamine, and with milk furnish in the dietary the common sources from which we obtain protection for children.

When one realizes that in addition to the easily assimilated fat and sugar which milk contains, it supplies vitamins for growth, lime and phosphorus for bones and teeth, and furnishes just about the highest quality protein for body-builder in existence, one is in full sympathy with the nutrition specialists who are urging one pint of milk per day for adults and one quart for children.

Because a cow has no power within her body to manufacture vitamins, it is very necessary that she be allowed to feed upon the green things that are so rich in these food factors, if her milk is to contain the valuable growth-promoting vitamins.

Let her graze on grass, clover, alfalfa and other green and leafy things, in addition to feeding on the grains and other dry foods.

Equally bad would it be to deprive a nursing mother of green and leafy vegetables. Let no old-wives tales influence her to restrict her diet for fear of giving the baby the colic.

I was once in a state where a number of boarding school pupils complained of a certain eye trouble. The wise examining physician felt that the number so suffering was too large in proportion to the number of pupils in the school, and he immediately called upon the dietitian to show what she was providing for the daily meals.

Potatoes, cereals, bacon, molasses, some muscle-meat, bread and oleomargarine comprised the bill of fare;

no milk, no green vegetables, no fruit, and a substitute for butter.

The physician ordered a pint of milk and a green salad every day for each girl affected, and in a short time a great percentage of the eye trouble disappeared.

In a town where the animal industry division of the state college and the division of home demonstration work were putting on a milk-for-health campaign school children were weighed and measured and the amount of malnutrition indicated was recorded. In one school where the children of well-to-do parents were examined malnutrition affected sixteen per cent. In a school for negro children on the outskirts of town only fifteen per cent were affected.

The negro children had no more milk than the whites, but I attribute that lowering by one per cent to the little vegetable garden out behind almost every negro cottage; to the collard and the turnip greens, the cornfield peas and onions; and to the generous amount of pot-liquor and cornbread which they consumed.

Pot-liquor and vegetable soup save for us much of the mineral salts and water-soluble vitamins that are usually poured off in the water in which vegetables are cooked.

Vitamine B is found in so many of our common foods that almost all of us would take in enough for health's sake if we ate the ordinarily well-planned meals.

Cereals which do not have all of the outer covering or embryo removed from the grain (and this includes bread made with brown flour), milk, eggs, glandular organs, nuts, green vegetables with spinach at the top, and yeast, all contain B. It is highly concentrated in yeast, and under certain conditions it may be advisable to administer it in this form; but any of the things mentioned above will keep us well supplied if we use them in our daily meals. In cooking vegetables never use soda in the water, as alkali destroys vitamins.

Physicians frequently advise the feeding of well-steamed spinach to infants. This provides them with both

of the growth-promoting vitamins, and if the vegetable is mashed through a sieve before serving it is not difficult of digestion.

The homely old cabbage as well as turnip salad furnishes favorite North Carolina dishes. They are grown in almost every garden, and can be served to suit almost any palate. Cabbage contains all three of the vitamins in quantity, but it is only when served raw that we get the benefit of C, the scurvy preventer. This vitamin is affected by heat, and cabbage in the form of cold slaw is one of our chief sources. It can hold its own with oranges, grapefruit, lemons and tomato juice as a scurvy-preventer. Raw onions, celery and to a small extent pears, apples and grapes are also sources of C.

But you are saying the people of this country do not suffer with scurvy. It is only men on long arctic voyages and soldiers shut off entirely from green things who are affected. I am not so sure of that. Perhaps we do not have scurvy in its usually severe and recognizable form, but there are people all around us who are showing mild scurvy symptoms.

Those infants fed on sterilized milk without the addition to the diet of orange or tomato juice; those adults who come through a fall and winter with practically no raw fruit or green vegetables, all are manifesting the lack and it is interesting to note how readily these symptoms respond to proper diet. Try raw fruit and vegetables all through the winter for "that tired feeling" in spring.

Immature pods, such as string beans and okra, and fleshy leaves and shoots, like asparagus, have a vitamin value the same as leafy vegetables.

Don't forget in planning your daily meals to add those roots which furnish water and fibrous material to help keep the bowels properly emptied. We need the stringy and fibrous foods as well as the bran of grains to sweep down the sides of the intestines, and a liberal amount of these should help us reduce the size of our medicine shelf.

Our old friends, parsnips and carrots, beets and turnips, will do their best to help in this particular.

Neither corn at the milky stage, on the cob or in the many other delectable dishes, nor garden nor field peas, need a boost to get them on the family table.

Potatoes of both kinds are even more popular. In fact, there is danger of their being used so freely as to exclude other necessary vegetables. The Irish potato is a valuable vegetable because of its universal use. It contains mineral salts, especially iron, and an easily digested starch, if that starch is well cooked, but its vitamin value is not high. The sweet potato contains some of the growth-promoting vitamins, as well as starch and sugar. It contains, also, phosphorus, iron and lime.

Having all these things in mind, what shall we have for breakfast, dinner and supper?

Begin the day with an orange, or half grapefruit, a raw tomato, or some of our orchard fruit, raw. This will furnish the scurvy-preventer. Follow with oat-meal, puffed wheat, or any other grain which retains some of its outside covering or embryo. Pour over this cream or the top of the milk.

In the grain we have vitamin B and in the cream vitamin A, both growth-promoters.

If your appetite is vigorous, continue with an egg and bacon, if you like. Drink a glass of milk, even if it has to follow that soul-satisfying cup of coffee.

At dinner eat for a body-builder or repairer whatever meat pleases you, or it might be poached egg, or a milk dish, and serve with it a leafy vegetable, a juicy and fibrous root, and, if possible, a lettuce or other green vegetable salad. You can provide as an energy-producer whatever starch suits you in the way of potatoes, bread, rice or macaroni, and choose your dessert from any of the following: stewed fruits, ice cream, puddings, fruit pies, or jellies.

If dinner is as full a meal as the menu suggested, supper can be light.



A small amount of meat, if you must have it, though meat once a day is quite sufficient; grits or batter-bread, a green salad and stewed fruit, any bread that you desire with butter, a glass of milk and one cup of tea or coffee.

If you are frankly fat or approaching that state, be careful of your caloric portions. That is, of the things that are fat-producing, such as sweets, fats and starches. It is not necessary that you cut them off altogether; simply cut in half the amount you usually eat.

## SOME PRACTICAL HINTS ON DIETETICS

By R. B. Wilson.

THE human body has been well described as an engine, and it needs fuel just as an engine needs fuel. As an engine works best when it has the right kind and amount of fuel, so does the human body. Again, an engine has to be built and repaired and oiled and regulated, and the same thing is true of the human body.

The body requires three kinds of food: fuel food, building or repair food, and regulating food.

The fuel foods are the foundation foods of the diet, the foods that supply energy for muscular work. There are three groups of fuel foods: (1) Starchy foods, among which are cornmeal, hominy, oatmeal, flour, rice, macaroni, dried lima beans, peas, bread, potatoes; (2) sugars, among which are sugar, corn syrup, candy, molasses, many of the fruits; (3) fats, among which are lard, pork, bacon, butter, cream, peanut butter.

All of these are almost pure fuel. At least eighty per cent of the food should come from this group, using the starchy foods in the largest amounts, fats next, and sugars least.

The body needs constantly food for repairing or rebuilding worn parts, as well as foods for supplying energy. Building foods, generally speaking, fall into two groups, called proteins and mineral salts.

Protein, the chief building food, is represented in the diet by lean meat of all sorts, including fish and fowls, milk, cheese, dried beans and peas, and nuts. Protein is also found in cereals and bread.

The second group of building material includes a variety of minerals which help to make bones and other body parts. They are found chiefly in milk, cereals, fruits and vegetables. Of such minerals lime, iron and phosphorous are especially needed to keep the body in a healthy condition. These are found in milk, green vegetables and cereals made from whole grains, as oatmeal and flaked wheat.

The body also needs foods that aid in keeping the various organs regulated. Mineral salts not only aid in rebuilding the worn parts, but also help to keep the body running properly. Bulky foods are also needed for this purpose, as a diet containing no vegetable fibres is insufficient except for babies and very young children. This bulky food counteracts constipation, and gives adequate work for the teeth and jaws, the stomach and bowels. Examples of bulky foods are vegetables, such as lettuce, turnips, celery, cabbage, tomatoes and onions; and fruits, such as apples, pears, prunes, dates and figs.

A still further essential for a healthy body is for it to receive sufficient vitamins. These are minute substances present in small quantities in a number of foods, and absolutely necessary to bodily growth and health. Milk, eggs, whole wheat, corn, oatmeal and nearly all the vegetables and fruits contain vitamins in varying quantities.

Nearly every individual gets sufficient to eat in the way of the chief



fuel foods, but a very great number do not get enough of the others. The result is a state of ill health, especially constipation and the large group of diseases generally called indigestion. Pellagra and other skin diseases result from the same cause. In other words, there are many people who literally are starving, though at the same time they are able to provide food and in fact are hearty eaters.

It is because of this that special attention is now being directed to the importance of using more milk and vegetables and fruit. There is not a farm in North Carolina, nor a farm tenant, that is not able to provide a vegetable garden, and in our villages, towns and small cities there is nearly always room for a vegetable garden. Most families on the farms can have milk cows. Yet it is lamentably true that a majority of the farm families of the State do not have milk cows, nor do they have gardens in which they raise vegetables for their home tables. Milk as a food has been discussed in other pages of this issue. In the following few pages are some facts about some of the more common vegetables.

The various fruits and fresh green vegetables are low in fuel value as compared with the stand-by foods. An apple, for example, has somewhere near one-fifth the food value of a piece of bread of the same weight. But the apple brings something that the bread and meat and their usual accessories do not bring. The evidence collected under the watchful eyes of professional observers indicates there is really truth in the old saying, "An apple a day keeps the doctor away." While the fruits and the less nourishing vegetables have a rather low value when measured by the protein-carbohydrate-fat scale, they should not be omitted from the daily diet for the following reasons:

(1) Fruits and fresh vegetables are rich in those mineral salts, particularly calcium, phosphorus and iron, which must be taken in abundance to ensure healthy growth before maturity, and continued health in the later years of life. Calcium is the

chief mineral element used in the growth of the bones and teeth. Without it in abundance, the bones may be ill-shapen and the teeth not long-lasting. Phosphorus enters into the construction of every tissue of the body and combines with calcium in the building of bones and teeth. The quantity of iron required, though small, is indispensable if health is to be maintained. The necessary amount is often absent in the diet when the supply of fruits and vegetables is too scant.

(2) Fruits contain acids which are not only grateful to the palate, but are excellent laxatives. All acid fruits, including the tomato, a vegetable fruit, are very useful as stimulants of intestinal action. Furthermore, paradoxical as it may sound, these fruit acids act in a remedial way in neutralizing the acid condition of the blood and the tissue fluids which is the cause of some troublesome diseases which are often due to faulty dietary habits. These acids are combined with salts, and those salts splitting up in the system reappear as alkaline carbonates and phosphates. The value thus conferred has long been recognized by physicians, and is well shown in various fruit-growing regions where certain classes of invalids have received much benefit from the so-called "fruit cures."

(3) The modern method of refining food products, and particularly the milling of cereals, has gone so far that a healthful quantity of the indigestible part, the cellulose, is not retained. The result is that the bulk of the undigested residue is not great enough to enable the food canal to pass along its contents as it should. Aside from the small or moderate contribution to the nourishment of the body made by lettuce, celery, string-beans, and other vegetables, as well as by the fruits, they render a valuable service in preventing or overcoming constipation.

(4) The leaf vegetables, such as spinach, lettuce, cabbage and beet or dandelion greens, contain both the vitamins which are essential to growth in the young and to the maintenance of health in the adult,

but these protective substances are not supplied so abundantly in these leaves as in milk.

The storage capacity of the herb-eating animals enables them to keep in good condition on the protective substances which their digestive tracts extract from the herbage which they consume, either green or dried. But man and the other omnivora must have an accessory supply of those essential substances; and milk is the safest and most prolific source from which to get them.

The conclusion to which some of the ablest students of dietetics and wholesome living have come is that, in view of their value in the restoration and preservation of health, as much money should be spent for fresh fruits and vegetables as for meats and fish.

### Notes on Some Vegetables

Spinach, among the vegetables, is exceptionally rich in the three important minerals, iron, phosphorous, and calcium.

The carrot deserves a more prominent place on the everyday bill of fare for its healthfulness. The child's craving for it should be encouraged by presenting the grated or ground root as a salad, or serving it cooked.

The food value of string-beans, expressed in calories, is hardly more than one-quarter that of green shell beans, but the green pods of the string-beans bring a good supply of iron, phosphorous and vitamins.

Green peas have more than half the value of dried peas in protein value and more than one-quarter their total food value.

Cabbage is of rather low fuel value, but it has a medium supply of the three most important health minerals, iron, phosphorous, and calcium, and is rich in vitamins. Moreover, the cellulose or wood fibre in the sauerkraut or cabbage-salad is a food substitute among many peoples for the liver pills that cannot be grown in the home garden.

Cauliflower with cabbage has less than half the food value of the potato, but its percentage of calcium is high. The potato, rich in potassium

salts, does a good office in helping to neutralize those acid conditions of the system which the doctors recognize as serious, and which often arise when the diet does not include a sufficiency of fruits and green vegetables. The total food value of the potato boiled is 440 calories, mostly in its abundance of starch.

The food value of beets per pound, 215, and that of parsnips, 300, is mostly derived from the sugar which they contain.

While satisfying the spring craving for early green things and indulging in boiled dandelions, one gets not only the medicinal action of the vitamins and the great abundance of mineral salts carried in the tissues of that plant, but otherwise a food value which is more than half that of the potato. This plant is exceptionally rich in the mineral salts. There is a hygienic reason for the craving.

Beet greens, bringing the blessings of the green-leaf foods, are near spinach in total mineral salts and have a total food value of a little bit above that of the roots which have nourished them.

The real food value of both celery and lettuce is low, and if the need of saving money is imperative, more may be saved by dropping celery first from the bill of fare, though the flavor of celery is of distinct value. Lettuce has the things which the green-leaf vegetables bring and is especially rich in phosphorous.

The onion, with about half the food value of the potato, is a helpful vegetable. To present to the sense of smell and to the palate advance messages of pleasing odors and flavors excites a prompt secretion of the digestive juices and goes a long way in helping the stomach and the rest of the food canal to get the most and the best that there is in the heartier foods. The onion and the tomato may be classed together as welcome aids to the cook in saving the dietary which she serves from day to day from the monotony of taste which is a bar to the best nourishment of the body.

Rhubarb should be used sparingly if at all. The acid of the sauce prepared from it interferes with the

prompt digestion of bread or other cereals which may go into the stomach with it. It is not like the acid of the apple, orange, tomato and that of most of the other fruits, promptly converted into healthful alkaline salts, but the oxalic acid which gives rhubarb its sourness passes through the system and is excreted by the kidneys still as an irritant acid or as oxalates. The oxalic acid from the druggist is dangerous enough always to bear the poison label. Over-indulgence in rhubarb is often followed by irritant effects, and fatal poisoning has resulted from the too abundant use of the plant as a food. Some good vegetables have a trace of oxalic acid, but rhubarb and sorrel have an over-abundance of it.

### Cooking Vegetables

A good part of the value derived from the use of some vegetables is in their vitamins and their beneficial mineral salts. Unless care is taken to guard against it, the water in which they are cooked may extract a large part of these salts, so that they are wasted. And unskilled cooking may also be wasteful of the other food constituents of vegetables. For example, potatoes when peeled and then soaked in cold water before boiling were found to have lost 46 to 58 per cent of their nitrogenous mat-

ter and 38 per cent of their mineral salts. Put immediately into boiling water the loss is smaller, and boiled unpeeled the losses were insignificant. As ordinarily cooked, carrots were found to have lost 40 per cent of their nitrogen and 26 per cent of their sugar. All vegetables should go over the fire in boiling water. Peas and beans should always be cooked in non-salted water, and preferably soft water.

Spinach should be boiled in water five minutes, then drained not too dry, salted, and then allowed to finish cooking in the little liquid which remains in the leaves.

String-beans should be cooked in boiling water and salted only in the last half hour of cooking.

Leave green peas in their pods until just before cooking. Then soak in cold water a few moments before putting them into boiling water. Add salt about fifteen minutes before removing from the fire. Let almost all the liquid evaporate.

Asparagus, after it is prepared for cooking, should be tied into a bunch with an inch-wide tape or strip of white muslin and stood in an uncovered kettle of boiling salted water, the tips uncovered by the water. Boil ten minutes, then lay the bunch down so it is wholly covered by the water and boil another five minutes.

## THE HEALTH VALUE OF FRUIT

SOME fresh fruit should be the first course of every breakfast. Fruit at breakfast, say grapefruit, or orange, or an apple, or some berries, aids in the digestion of oatmeal and cream or rolls or toast or bread and butter, or any cereal. This is the physiological fact as observed in studies of the human digestion. Acid converts starch into dextrin in natural digestion, and to say that the two should not be mixed is flapping.

The acids of fruits are oxidized in the body, and hence are foods. Fruit acids are changed into carbonates in the blood, and thus tend to render the blood more alkaline than it is

ordinarily. I mention these physiological facts for the purpose of counteracting the popular notion that the acid fruits are "bad for rheumatism." Not that any acid has anything to do with the causation of any of the various diseases under the name of "rheumatism."

Most fruits contain vitamins. Orange juice, apple juice, peach juice, apricot juice, berry juice, lemon juice, pineapple juice, grape juice, or tomato juice, may be fed in doses of a few teaspoonfuls daily, apart from other feedings, to infants from three months of age upwards, to prevent scurvy and to favor normal nutrition and growth.



An apple a day won't starve all the doctors, but an apple or other fresh raw fruit after each meal will keep the dentists in a properly chastened frame of mind, for the acids of fruits are ideal cleansers for the teeth and fruits are natural toothbrushes.

Fruit is often recommended by doctors as a wholesome substitute for candy and other sweets for the kiddies. I take issue with all who hold that view. The youngsters crave, need and should have pure candy and wholesome sweets daily as part of their diet; such foods are quite as wholesome for children as any fruit can be. But for many adults who have a too well developed

or too highly cultivated sweet tooth, fruit is a fine substitute, for it satisfies the craving or appetite with greater bulk and less nutriment. Persons who have accumulated excess weight from eating too much and exercising too little—the only way one does accumulate excess weight—may take the cue from this and sink their teeth into some fruit about an hour before meals. They will find that, with the appetite thus tricked by a ruse, so to speak, they can actually leave the table, if nothing more.

Children under four should not eat raw fruit, but only fruit juices or the pulp of stewed or baked fruit.—William Brady, M.D.

## LETTUCE THE NATURAL FOOD

I HAVE concluded an extended study and research into the question of so-called health foods by the decision that it would be of the utmost benefit to the general health if the consumption of lettuce the year around were increased about a thousand times the present consumption. Let us enumerate the reasons for eating lettuce every day that lettuce can be had.

(1) Lettuce is one of nature's toothbrushes.

(2) Lettuce is rich in vitamins.

(3) Lettuce is unquestionably superior to any known medicine which may be taken internally as a source of available iron for man, although certain iron solutions administered by injection into the blood or into the muscles may be superior in certain illnesses.

(4) Lettuce serves as a physiological stimulus not alone to appetite and digestion in the stomach, but to the more important process of intestinal digestion, and may be considered a preventive of colitis.

(5) Lettuce gives a wholesome bulk to the residue in the intestine, and this tends to counteract the evils of ultra-refined concentrated diet.

(6) Lettuce is among the lowest of all foods in fuel or nutritive value from the caloric point of view, yield-

ing only 90 calories per pound. (About equivalent to two crackers or half a glass of milk.) This feature should commend lettuce to all overstocked persons.

(7) Lettuce freely used in the diet opposes acidosis and tends to keep the system normally alkaline.

The popular notion that lettuce is sedative or soporific is a myth propagated by the romanticists who used to write books on "dietetics" as an avocation. Lettuce will no more soothe the nervous system nor put one asleep than will peanuts or ham gravy.

Of course the less wild life consumed with or on one's lettuce the less nourishing the lettuce will be. Vegetarians should scrutinize their lettuce very carefully. It is important that all lettuce be thoroughly examined to discover uninvited guests, and well washed and rinsed in pure water to route any such guests. Metchnikoff insisted on cooking even lettuce, but that would be going to an unreasonable extreme for the sake of a mere theory.

A variety, or kind, of lettuce called "iceberg" is so uniformly crisp and palatable that even persons indifferent to ordinary lettuce find it an attractive relish.

Let us eat lettuce each day.—William Brady, M.D.



## SUGGESTIONS ABOUT ITCH AND LICE

By J. S. Mitchener, M.D.

As so many school children have head lice or pediculosis capitis and itch, or scabies, during their days at school, mothers, teachers, and children themselves, should know something about these two "diseases," especially how to prevent and cure them.

So far as life is concerned, neither cause deaths, but by scratching one may carry into his body germs of erysipelas and blood poison, and death results. This is very rare. Head lice are not the lice that cause typhus fever (not the same disease as typhoid), nor do they carry any disease, so far as we know. The worst thing, then, about itch and lice is that they make one so uncomfortable that he almost scratches his finger nails and skin off. You had just as well have a placard tacked on your back with "itch" or "lousy" written on it. It does not take other children long to learn what the trouble is and point out those who are so unfortunate as to have these diseases.

### ITCH

**The Cause.**—Itch is caused by a tiny parasite known as the *acarus*. It is so very tiny that it can hardly be seen with the naked eye. When the female gets ready to lay her eggs, about fifty in number, she bores in the skin to find a suitable place for them to hatch. As the little worm passes along it leaves a burrow which is said to resemble a mole's track in the ground. Out of this burrow the young parasite comes to the surface of the skin. The male does not go into the skin, and therefore does not cause any itching.

**Signs.**—Evidences of itch are usually found first in the webs of the fingers, on the wrist, about the elbows, breast and genitals, but the entire body may be diseased. Scratching causes the skin to become red and may even infect it with pus germs so as to make you think something else is wrong.

**Symptoms.**—The name itself is the worst and only symptom. Itch begins usually ten days after exposure, but it may be even longer. The sensation is most always worse when the infected person is too warm from clothing, cover or fire. Often it is impossible to sleep at night.

**Diagnosis.**—Sometimes it is difficult to say if one has itch because the skin is infected with pus germs. However, when one has itch as described on the wrists, at the elbows, etc., consider that he has itch and have him treated.

**Treatment.**—The simplest treatment is the best. The underwear should be thoroughly boiled. The patient should take a bath, using plenty of soap lather and then rub night and morning with a salve made by thoroughly mixing sulphur and vaseline or hog-lard, using one ounce of sulphur to a half-pound of vaseline or lard. This treatment should kill the parasites causing itch in from five to ten days. If the skin begins to look irritated, chapped or wrinkled, stop using the sulphur salve and use one made of the same strength with boracic acid. The rubbing should be thorough, but not too hard.

If the treatment is too intensive, the sulphur salve will cause the skin to itch, and because of this one should discontinue using it if the skin begins to look scaly, chapped or wrinkled, as mentioned above.

When treatment is begun clean underwear should be put on, as the parasites which cause itch get in the clothing. After three days treatment, another bath can be taken, and in each instance clean underwear must be used. If the skin gets chapped, soap and water may irritate it. For this reason it may be best not to bathe until the chapping, etc., has disappeared.

**Prevention.**—To prevent contracting itch we must not come in contact with a person who has it, especially

in regard to sleeping and wearing the same clothing. If you find that you have slept with someone who has the disease, it would be a good idea to take two or three days' treatment with the sulphur salve as described above.

### LICE

There are three kinds. Pediculosis capitis, pediculosis corpus and pediculosis pubis. Pediculosis capitis or head lice is very common among school children, while the other two forms of lice may exist but are rarely seen.

It is needless for the mother to be sensitive about a louse being found in her child's head. Unfortunately, there are parents who do not look after their children as they should, and children are closely associated at school. They will put their heads close together and wear each other's hats, and in this way get lousy.

**Signs.**—Quite often the louse itself may be found in the child's head, but the nits or the eggs of the lice can usually be easily seen. To prove whether what you see is or is not a nit, break the strand of hair and hold one end between your fingers, then hit the hair with something or gently pull it between the fingers. If the particle is dandruff or something else it will fall off, but if it is a nit it will not.

Quite often kernels will come in the back of a child's neck because the lice irritate the scalp and may cause some infection which makes the glands form kernels.

**Symptoms.**—The only symptom of head lice is itching of the scalp and the possibility of the kernel becoming an abscess.

**Treatment.**—Crude petroleum may be used, or equal parts of kerosene oil and sweet oil thoroughly applied to the scalp. Tie a towel around the head and put the child to bed, or it might get its head near an open fire. Next morning wash the head thoroughly with water in which you have put a little borax. Repeat this for about three nights.

To remove the nits, comb the hair with a fine-tooth comb, dipping the comb in vinegar as you comb it, or the hair may be bathed in some

weakened vinegar, about one part of vinegar to four parts of water, and follow this with a fine-tooth comb dipped occasionally in the vinegar of full strength. In boys it is not a bad idea to clip the hair.

### COUNTY LAWS ON ITCH AND LICE

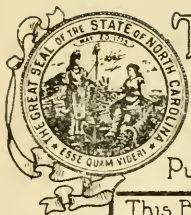
One of the best ways to control these diseases is to prevent children from attending school if they have them. The State laws of North Carolina give authority to the County Board of Health to pass such regulations as are necessary to safeguard the health of the county. Thus, your county board of health, which is made up of the chairman of the county board of commissioners, the superintendent of county schools, the mayor of the county town, and two physicians, have authority to take steps to control these diseases.

The North Carolina State Board of Health recommends that each county board of health pass the following ordinances, or something of such nature as they see fit:

**Section 1.** The principal or teacher of any private or public school in ..... County is hereby empowered and authorized to inspect the children attending the school when school opens, and at intervals during the year, to see if any child has any symptoms or signs of itch or lice.

**Sec. 2.** Each principal or teacher in any public or private school in ..... County is further authorized and empowered to dismiss from her school any child whom she suspects as having itch or lice, until such child shall present satisfactory certificate to her, signed by the county physician, the county health officer, or any other legal practicing physician, that such child is free from the aforesaid diseases.

**Sec. 3.** The principal or teacher of any public or private school, when she dismisses from school any child in compliance with the above regulations, must notify the parent or guardian of said child in writing, her reason for so doing, and must also write to the county physician or county health officer that the disease is prevalent in her school.



# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request!

Entered as second-class matter at Postoffice at Raleigh, N. C., under Act of July 16, 1894.

Published monthly at the office of the Secretary of the Board, Raleigh, N. C.

Vol. XXXVII

APRIL, 1922

No. 4

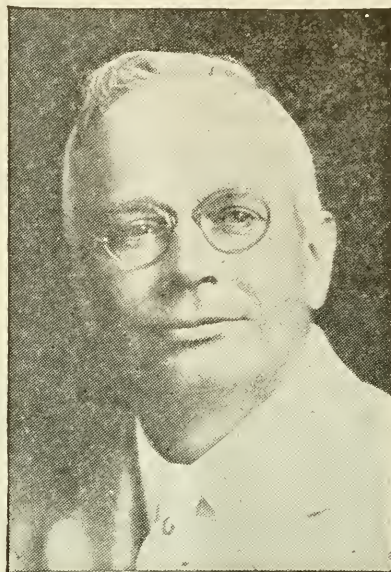
MAR 12 1923



## FIVE YEARS OF MEDICAL INSPECTION OF SCHOOL CHILDREN IN NORTH CAROLINA

3,595 Children Operated on in Tonsil Clinics  
66,452 Children Given Free Dental Treatment  
240,128 Children Examined by School Nurses,  
Physicians and Dentists  
500,000 Children Examined by Teachers.





THE LATE THOMAS WALTER BICKETT, WHO,  
AS GOVERNOR OF NORTH CAROLINA, SECURED  
THE PASSAGE OF THE FIRST LAW, MAKING  
THIS PROGRAM POSSIBLE.

*"The State has a right to say what kind of a child shall be admitted to a school supported by the State; it has a right to exclude from the public schools children that are not desirable there from a health standpoint. That is the basis of all of our quarantine laws. And in order that the State might do its work efficiently, why, I insisted upon the passage of this bill, the terms of which you are familiar with. To correct, while it may be corrected, some defect of sight, or hearing; to convert into a bright a dull mind by the timely removal of adenoids; to arrest in its incipency some disease that would, if not fatal to life, at least be fatal to the usefulness of the child, is the very greatest work in which the State can engage, and pays the handsomest dividends."*—From address by GOVERNOR BICKETT, October 11, 1917.

# FIVE YEARS OF MEDICAL INSPECTION OF SCHOOL CHILDREN IN NORTH CAROLINA

By G. M. COOPER, M.D., DIRECTOR BUREAU OF MEDICAL INSPECTION OF SCHOOLS.  
NORTH CAROLINA STATE BOARD OF HEALTH

## PURPOSE OF PUBLICATION

The purpose in publishing this Bulletin is to set forth the proof of the necessity for scientific medical inspection of school children in the modern public school, both urban and rural; and to emphasize the necessity for an effective, systematic, coördinate plan of "follow-up" work, which will secure for the defective child the treatment he must have to give him a normal chance to grow up into a fully developed healthy adult. The history, organization, development, support and some results obtained, through the practical application of the ideals of the Department of Medical Inspection of Schools of the North Carolina State Board of Health, in an intensive effort to establish certain standards in this field during the last five years, is briefly told. The fact that during this period more than seventy thousand school children throughout the length and breadth of North Carolina have received dental, medical, or surgical treatment at the hands of paid representatives of the Department, is only incidental to the more important item, that in order to accomplish such results we have been able to command the active and loyal service of a corps of capable trained nurses, dentists, physicians and specialists. Time alone—10 to 20 years at least—can serve to emphasize the marked effect on the health, happiness and physical well-being of every class resulting from the inauguration of this work. The appalling percentage of defective children found in every county and from every class, both white and colored, from city and country, is not surprising; nor is the condition peculiar to this State. The most perplexing, the most discouraging, and to the Director of this work the most unnecessary and heartbreaking condition (it is no theory) confronting us at every turn, is the wide, fixed, and almost impassable gulf existing between the thousands of helpless children needing their services on the one hand and the physicians, surgeons, specialists and dentists on the other. The thinking, able men in the medical and dental professions, acting with the public at large, having vision enough to grasp its importance, must soon evolve some general workable, common-sense plan applicable to the general population that will eliminate this difficulty, which, of course, exists everywhere.

## SPECIAL ARTICLES

In preparing this Bulletin an effort has been made to present a compact mass of genuine information to pupils, parents, teachers, school nurses, medical inspectors, health officers, physicians, dentists and to the public in general. Thus, in addition to the efforts of the Director, we are publishing four articles on specific subjects by people who are authorities on the questions they are discussing. First of these articles is by Dr. Taliaferro Clark, Surgeon, U.S.P.H.S., on the "Duties and Responsibilities of the School Nurse." Dr Clark has had charge of all Federal Government activities in Child Hygiene conducted by the Public Health Service for several

years and is the foremost authority on this question in the United States. This article should be in the hands of every trained nurse, either engaged in or contemplating any kind of public health work, but especially school work. Likewise, every county school superintendent, county health officer, or city and high school superintendent employing school nurses should be governed by the standards laid down by Dr. Clark, in so far as may be possible. The article on the "Modern Health Crusade," kindly supplied by Mr. DeForest, the originator of the movement, expresses just what that movement means. The article by Mr. Peterson on "Making Health Teaching Attractive" is by a man whose opinions on such subjects are important. Mr. Peterson is not only the editor of one of the most successful weekly papers in the State, but has had twenty-five years experience as a successful school teacher. Last, and also of prime importance, is the article on "Dentistry" by Dr. Garland W. Holliday. Dr. Holliday is Professor of Prosthetic Dentistry in the Richmond Dental College. He is a native North Carolinian and gave us splendid assistance in starting dental work for school children, treating himself several hundred children for us during the summers of 1918 and 1919.

## RECORDS

In the tabulated results of examinations made, children treated, and all other work done, only what has been accomplished directly through the agencies of the Bureau of Medical Inspection of Schools is considered. For example, in stating the number of children given dental treatment, only those treated by dentists paid in full and working exclusively for this Department are recorded. As a result of the work of this organization for the past several years, however, many hundreds of children are being treated annually by various local agencies throughout the State. Therefore the work of medical inspection of school children, with more or less uniform standards, is an accomplished fact in North Carolina.

## TEACHING PREVENTION BY EXAMPLE

It cannot be stated and repeated too often that the main essential of all public health activities, in all times, everywhere, should, and must if successful, be always toward preventing disease. Therefore the clinic activities of this department are carried on wholly as demonstrations. The age-old truth that teaching to be effective must be by precept and example seems to have been displaced altogether by "precept" in the form of didactic teaching. In short, talk. Dryden took note of the trend when he said "No arts are without their precepts." But some scores of years before Dryden, Shakespeare wrote, "I may example my digression by some mighty precedent." The precedent we have established in inaugurating school treatment clinics probably is not a mighty one; but it is an example all the same. The idea is simple. To illustrate: If in a school of one hundred pupils we find fifteen children badly needing an operation for removal of diseased tonsils and adenoids, we hold that it is quicker, easier, cheaper and more effective to simply operate on one of them in order to convince the other children in like condition, the teachers, the parents, all of the other pupils, the community in general, that an operation is what the fifteen children need. The child treated is an example to all the people who know him and see him that the treatment is good. One living, moving example will carry more



weight than six miles of literature and six years of talk by all the health officers and physicians in Christendom. So, after demonstrating practical methods, teaching, educating by example, how to prevent the common physical defects of children, and how to treat them when it is impossible to prevent, the responsibility of the State Board of Health in this field will automatically pass to the general public and to the professions most concerned, and on whose shoulders the work must depend for permanency. In North Carolina this may take five years longer, it may take ten; but until it is thoroughly completed and the professions and the public accept the responsibility and acknowledge it fully "without stint or limit," the State Board of Health must continue to function in this particular.

### History of Medical Inspection in North Carolina

For a few years prior to 1915, the local authorities in Raleigh and a few other towns in the State undertook medical inspection of some of the children in a limited capacity. The work, while exceedingly valuable and performed most conscientiously by the physicians attempting it, was of necessity entered into against many difficulties. In the first place the parents, most of them mistaking the purposes, objected. The physicians were selected from general practice and could only devote an hour or two at the time and at irregular intervals to the work. Other competing practitioners looked with suspicion on the enterprise. But for the most part there was no uniformity of efforts and no well thought out plan of procedure; and the effort seemed to be sporadic, arising no doubt from a sense of necessity for something to be done to meet conditions existing everywhere. Nothing at all had been done for rural children, except the efforts made by some three or four whole-time health officers.

Beginning in the autumn of 1915, and continuing through 1916, the State Board of Health employed two or three physicians and undertook, through financial support from the counties, to set up some definite standards. Naturally the first requirement was to ascertain definitely the need for such work. So the work done those first two years was more in the nature of a survey. About twenty thousand school children were examined in some ten counties. The counties were representative, but the conditions found to be existing established without question the need for such service. The lack of the most elementary knowledge of sanitation and school hygiene was universal. The great percentage of children found to be suffering from decayed teeth and other common types of preventable physical defects made it imperative that the State Board of Health devote all possible energies toward meeting the responsibility.

To make a long story short, the Legislature of 1917—five years ago—acknowledged its responsibility and enacted a law embodying the preliminary requirements from teachers in starting the machinery to work for the child. That law at the time placed the State in an advanced position on the subject. It carried a small appropriation, while hedged about with so many contingencies made it difficult to utilize, yet it did suffice for considerable experimental work. This work covered two important phases. First, it demonstrated the feasibility and the desirability of beginning with the teacher; and second, it proved the necessity for follow-up work, that is treatment, and that it could and should be done by some responsible agency. So out of the law of 1917, which embodied the best thought to that date, a



Dentist employed by the N. C. State Board of Health at work for the pupils of the Eastman public school for the negroes in Halifax County.

This photograph was taken by Mr. George Eastman, the man who invented the kodak; and who has given several million dollars to the people of his home city, Rochester, N. Y., to establish dental clinics for children.



Dentist having a busy morning in Halifax County. This picture affords a good illustration of the type of children treated in the N. C. State Board of Health Free Dental Clinics for rural school children.

beginning was really made, and the present law, carrying a direct appropriation, was enacted by the Legislature of 1919. This law embodied most of the 1917 law which it repealed, and eliminated most of the impractical features.

Instead of undertaking a description, the law in full is here published, because it is shorter and more definite than any explanation of it could be.

(Chapter 192, Public Laws 1919.)

## **AN ACT TO PROVIDE FOR THE PHYSICAL EXAMINATION AND TREATMENT OF THE SCHOOL CHILDREN OF THE STATE AT REGULAR INTERVALS.**

*The General Assembly of North Carolina do enact:*

Section 1. It shall be the duty of the State Board of Health and the State Superintendent of Public Instruction to prepare and distribute to the teachers in all public schools of North Carolina instructions and rules and regulations for the physical examination of pupils attending the public schools.

Sec. 2. Upon receipt of such instructions, rules and regulations, it shall be the duty of teachers in the public schools to make a physical examination of every child attending the school and enter on cards and official forms furnished by the State Board of Health a record of such examination. The examination shall be made at the time directed by the State Board of Health and the State Superintendent of Public Instruction, but every child shall be examined at least once every three years. The State Board of Health and the State Superintendent of Public Instruction shall so arrange the work as to cover the entire State once every three years.

Sec. 3. The teacher shall transmit the record cards and other blank forms made by him or her to the North Carolina State Board of Health, and if any teacher fails within sixty days, after receiving the aforesaid forms and requests for examination and report, to make such examination and report as herein provided, the said teacher shall be guilty of a misdemeanor and subject to a fine of not less than ten dollars nor more than fifty dollars or thirty days in prison.

Sec. 4. The North Carolina State Board of Health shall have the records filed by the teacher carefully studied and classified, and shall notify the parent or guardian of every child whose card shows a serious physical defect to bring such child before an agent of the State Board of Health on some day designated by the State Board of Health between the hours of nine a.m. and five p.m. for the purpose of having said child thoroughly examined, and if upon receipt of such notice any parent or guardian shall fail or refuse to bring said child before the agent of the State Board of Health without good cause shown, he shall be guilty of a misdemeanor, and shall be fined not less than five dollars, nor more than fifty dollars or imprisoned not more than thirty days: **Provided**, that the distance the child must be carried shall not exceed ten miles. No pupil or minor shall be compelled to submit to medical examination or treatment whose parent or guardian objects to the same. Such objections may be made by a written and signed statement delivered to the pupil's teacher or to any person who might conduct such examination or treatment in the absence of such objection.

Sec. 5. Within thirty days after the completion of the examination of the children by the Agent of the State Board of Health, and after written statement of the proper authority hereinafter designated, a sum not exceeding ten dollars per hundred children enrolled in the county or city shall be paid to the State Board of Health to be used exclusively for the purpose of treating school children for defects other than dental, the same to be paid by the county commissioners of the county, and in cities or towns having a separate school system, to be paid by the city manager, city council, city board of aldermen, or city commissioners: **Provided**, that any funds so paid and not needed in enforcing the provisions of this act, shall be returned to the county or city from which it was received.



Sec. 6. For the purpose of providing free dental treatment for as many children as possible each year, and to aid the State Board of Health in making the examinations as provided for in section 4, a special appropriation not to exceed fifty thousand dollars per annum shall be set aside from "The State Public School Fund" and shall be paid by the Treasurer of the State of North Carolina on properly signed requisition forms to the Treasurer of the North Carolina State Board of Health.

Sec. 7. Chapter 244, Public Laws of one thousand nine hundred and seventeen, and all laws and clauses of laws in conflict with this act are hereby repealed.

Sec. 8. This act shall be in effect from and after its ratification.

Ratified this 8th day of March, A.D. 1919.

### Beginning with the Teacher

In compliance with the above law the card here published (Table 1) was adopted as the standard for the State. Teachers in every county have made the examinations of about 500,000 school children. The card is more suitable for use in town and city schools; but it has proved very satisfactory for even the smallest and most remote country schools for both white and colored.

### Following the Teacher's Work

Table No. 2 shows the reverse side of the card shown as Table No. 1. It is very complete and satisfactory for use by Medical Inspectors, and has proved satisfactory in the hands of nurses. The results by examinations by physicians, dentists or nurses following report by teachers is recorded on this side. Approximately 240,000 children have been examined by physicians, dentists and nurses after teachers made their reports.

### Results of the Survey

In the facts herein presented, selected at random from absolutely accurate reports, obtained through days and weeks and months of patient efforts in every county in North Carolina and running back over a period of five years, with every worker in the organization engaged according to one definite, systematic standard, viz., "Find the defective children," may be found the chief reasons for the existence of a State-wide system of medical inspection of school children. Our work has been conducted in every conceivable type of public school and among every class of people, white and black, from the Murphey school within a block of the Executive Mansion at Raleigh to the Culberson school in Cherokee County on the Georgia State line and the negro schools of Tyrrell County on Albemarle Sound. The findings indicate beyond cavil that every class of people has its share of physically defective children.

The causes which permit children having remediable physical defects to remain untreated year after year beyond their entrance to school at six years of age may be enumerated in the order of importance as follows:

1. Ignorance.
2. Indifference.
3. Morbid fear.
4. Prejudice.
5. Misinformation.
6. Poverty.
7. Natural fear of pain (in case of dental defects).
8. Difficulty in obtaining surgical service.

# NORTH CAROLINA STATE BOARD OF HEALTH

## PHYSICAL EXAMINATION OF SCHOOL CHILDREN

### TABLE NO. I.

(THIS SIDE TO BE FILLED IN BY THE TEACHER)

Name of school		County		Date		192	
Name of child		Township		Sex: Female		Male	
Color: White		Colored		Date of birth: month		day	
Name of parent or guardian		Address		Were father and mother related before marriage?			
Occupation							
Father living?		If dead, state year		Cause of death			
Mother living?		If dead, state year		Cause of death			
Number brothers living		Dead		Cause of death			
Number sisters living		Dead		Cause of death			
Age commenced school		Present grade		Grades repeated (number times)			
History of chicken pox		Diphtheria		Measles		Mumps	
Vaccination (smallpox)		Number times		When last successful (year)		Scarlet fever	
						Smallpox	
						Whooping cough	
						Vaccination (typhoid)	
						State year	

Date of Examination		192		192		192	
Height	Weight	Ins.	lbs.	Ins.	lbs.	Ins.	lbs.
Chest expansion							
Hearing (watch)							
Vision (Snellen)							
Vision with glasses							
Teeth, number defective							
Teeth, number missing							
Teeth, number fillings							
Use of toothbrush							
Enlarged tonsils							
Mouth breathing							
Skin eruptions							
Pediculosis							
Other defects							

(THIS SIDE TO BE FILLED IN BY MEDICAL INSPECTOR)

TREATMENT RECORD

MEDICAL INSPECTOR.



9. Failure of our institutions engaged in teacher training to provide standard and modern courses in health education, and to require every student to complete the course before receiving a certificate qualifying the holder to teach.

10. Failure of parents, teachers, and the general public to properly measure the relative values of life until too late.

### Some Existing Conditions

As previously stated, teachers at work in every county in North Carolina, have reported the examination (on cards similar to the blank published on another page) of approximately 500,000 school children. This examination has been complete and satisfactory in the direct ratio to which the teacher was interested. A careful tabulation of some of the information indicates that a little over 73% of the number examined, or 366,000 children had decayed teeth. Explained differently, that means that although the teachers can only detect the grosser forms of decay and that the teachers are not qualified to make a dental diagnosis, yet they are qualified to see the larger cavities of advanced decay. The number is therefore conservative. As a matter of fact the subsequent examination of approximately 240,000 of these children by physicians, nurses, and dentists themselves establishes the fact that about 80% have defective teeth. These conditions were not reported from any one section in excess over another; but were found among all classes, from city and country alike. The only exception being among the children of negroes living in country districts remote from town.

Is it any wonder that the physician making examinations of the young men between 21 and 31 drafted for the army in one county, keeping careful records, noted only 22 out of a total of 700 examined, still retained their sixth year permanent teeth; and could anybody expect another army call to show any better results unless an organized effort were made to prevent such continued neglect?

No figures are given concerning such conditions as defective vision, diseased tonsils and adenoids, because at best the teacher is only qualified to "guess" about those things. The same objection holds in part with reference to quoting figures from school nurses; however, as an illustration of general conditions, one nurse in the examination of 4,000 children in one county listed the names and addresses of 600 or 15% as having diseased throats of such an advanced type that even the neighbors could agree that "something was wrong."

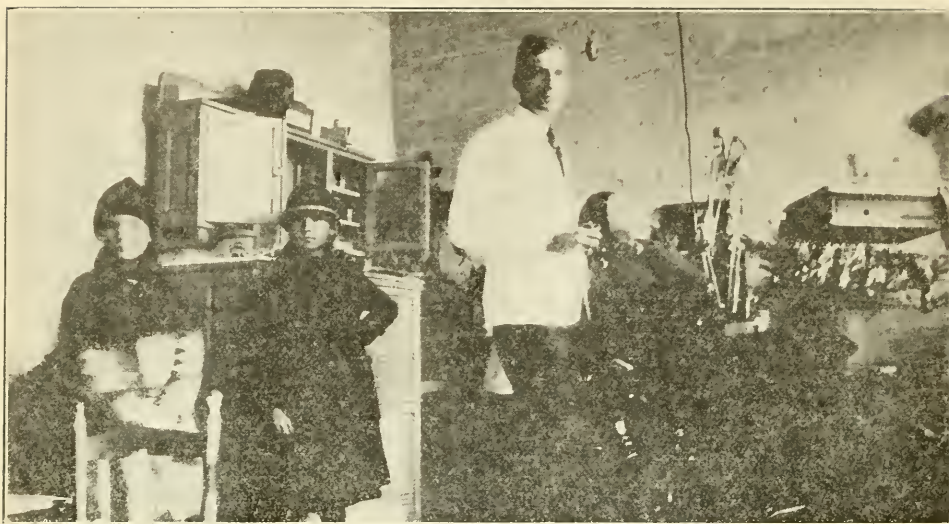
### SOME SPECIFIC ILLUSTRATIONS

#### From Carteret County

The teacher of a small school of 27 pupils, reported 20 of them as being grade repeaters. She wrote that 12 of the latter had "terrible throats." She also stated that 9 of the 20 grade repeaters were missing school some on account of having "chills, and that all of the 9 were, in her opinion, hookworm suspects. However, that school reported the lowest percentage of defective teeth for the entire State.

#### From Lincoln County

A school of 44 pupils reported 41 with decayed teeth; 37 of them stated they used a toothbrush occasionally or never; only 1 of the whole num-



Dentist employed by the N. C. State Board of Health at work in the Lenoir County permanent dental infirmary for school children, in the high school building at Kinston. A hot luncheon is served to nearly all the children in Kinston schools. An efficient health department and a modern school system working together as in Kinston could soon reduce the problem of defective, undernourished children to a minimum everywhere.



Wake County school children treated in the public school clinics conducted by the N. C. State Board of Health. A good exhibit of the type of portable equipment used in carrying on this work.

ber had ever visited a dentist; 7 of them were multiple grade repeaters, and all 7 reported as having "exceedingly bad teeth and throats," and 5 of the 7 suffered from poor vision. The teacher reported 21 with throat trouble.

#### From Rockingham County

A two-teacher school having 45 pupils enrolled, and 39 of them were present and examined the day assigned for the work. 27 were reported with decayed teeth—70%. 6 had visited dentist and had fillings—15%. 16 were reported with diseased throats—41%. 12 of them had repeated grades other than the first grade.

The examination of these pupils and the filing of the records was beautifully done. The school is in a good community and the teachers were both very capable.

#### From Johnston County

A three-teacher school, having a corps of good teachers and located in a good community, reported an enrollment of 128 pupils with 95 present and examined. 77 of the 95 had decayed teeth, only 7 of them had ever visited a dentist. 55 of them said they had never used a toothbrush. 37 of those children or approximately one-third of the school were reported as grade repeaters. This can readily be believed by noting that the attendance on the day of examination was 33 short of total enrollment. Probably most of the absentees were at home on account of toothache and sore throat. It might be remarked that Johnston County is one of the wealthiest in all of North Carolina and has perhaps a larger quota of first class dentists and splendid physicians than any county. The report from this school is typical of those received from some of the wealthiest communities in almost every county in the State and is proof positive that there are many causes other than poverty contributing to the physical neglect of children.

#### From Forsyth County

In one grade in one of the city schools of Winston-Salem consisting of children of an average type from miscellaneous homes, and having 51 children present, 48 were reported with decayed teeth. The homes of all these children were within a half hour's walk, or less, of the offices of fifteen good dentists.

#### From Wake County

The dentist sent by the Bureau of Medical Inspection of Schools to treat a limited number of the children in one of the large city schools of Raleigh found 98% of the children from 6 to 13 years of age in immediate need of dental work. Many of the patrons of this particular school are among the best known people in North Carolina.

A very recent examination of the children of two Wake County schools by the Health Officer reveals the following specific facts:

First school—two teachers. 90 pupils examined. 49 of them had diseased throats.

Second school—three teachers. 118 pupils examined. 52 per cent had diseased tonsils. 82 per cent had decayed teeth. 26 per cent had defective vision. 9 per cent had defective hearing. 46 per cent had never used a toothbrush. 5 per cent only had ever visited a dentist.





State Board of Health School Nurse weighing and measuring some Cleveland County school children. Most of this work is necessarily done by the teachers; and owing to the enterprise of the superintendent of the Shelby Public Schools, scales of the best type as here shown have been provided for this school.

Note the two pronounced adenoid sufferers in the line waiting.



This picture is a splendid illustration of the character of work the nurses sent out by the State Board of Health are doing for the colored as well as the white school children of North Carolina. The nurse is making this inspection in a Cleveland County school.

A large percentage of negro children have diseased throats; and some good authorities are convinced that such conditions help to increase the morbidity from tuberculosis among the negroes.

**Comment:** Ought to be unnecessary; but it might be well to remark that there are plenty of good dentists in Raleigh and Wake County, and at present writing there are nine eye, ear, nose, and throat specialists practicing in Raleigh.

The health officer of Raleigh and Wake County is a quiet, capable physician, and not a "sensationalist." He is thoroughly capable of making a correct diagnosis, and the above are his figures. And let us hasten to add that the figures found here have been found equally bad and worse wherever the same care in examination has been exerted. Neither is the condition peculiar to North Carolina, but exists everywhere.

#### **From Chowan County**

The dentist engaged to treat a limited number of school children in Chowan County found that of the 300 children first reporting for treatment and all needing it, only 7 had ever visited a dentist or received any kind of dental work before.

#### **From Jackson County**

The nurse followed very thoroughly the work of the teachers in this county. Taking the first school reports from the county in the files, arranged alphabetically, was a two-teacher school of 87 pupils. 77 of them had decayed teeth, only 2 had ever visited a dentist, and 32 never had used a toothbrush.

#### **From Columbus County**

The teachers of Columbus did excellent work in making the preliminary examinations of the children. Their work was followed by the special nurse from the State Board of Health. Selecting at random a report of the nurse for one week, the records show that she visited six schools, inspected 420 children, and found 82% of them having defective teeth and 133 children having diseased throats.

### **A CHALLENGE**

The above illustrations should suffice, all are from representative towns and counties. So the records run, all through the reports from teachers, nurses, dentists and physicians, covering nearly three quarters of a million examinations in all parts of the State. It is a situation which presents unlimited possibilities for the most valuable service to the childhood of North Carolina. It is a challenge to the leadership of the entire State. If the opportunity is neglected nothing but shame can follow. It is a well established medical fact that diseases of the heart and circulatory system which are among the most frequent causes of death, and cause much suffering often have their origin in diseased tonsils and decayed teeth, sometimes years before the manifestations of their presence can be detected. The sick, defective, handicapped child of today is most often the invalid or handicapped adult of to-morrow. The children cannot help themselves in these matters until it is too late.

A wise man once wrote that "Knowledge is power," but a wiser than he long before laid down the dictum "Know the truth and the truth shall make you free." Whether or not knowing the truth concerning these things shall mean freedom from physical handicaps for all of the thousands of our school children involved, the North Carolina State Board of Health

has fearfully but determinedly accepted the challenge to do its level best to help some of them.

Our answer to the call for these children has been the organization of tonsil and adenoid clubs and free dental clinics for school children. Much of our work has been experimental in the field of community health, it has all been an attempt to try to better prevailing educational methods in health teaching, through combining a maximum of actual service with a minimum of "talk," commonly known as "Advice."

## THE ANSWER TO THE CHALLENGE

A few days after this writer commenced the practice of medicine in the town of Clinton many years ago, one hot afternoon while waiting hopefully for patients, there appeared suddenly in the open doorway a large be-whiskered old man, with a hand high up on each side of the door holding himself and gasping for breath. At about every third gasp he would gurgle "Do something!" Just behind him an old woman was gesticulating wildly and shouting shrilly about sixty times a minute: "Do something!" The old man had an acute attack of asthma. The finest prescription Osler ever wrote would have been worthless to him. He really needed to have something done, and in a hurry.

From that day to the present that helpless old man's inarticulate cry "Do something" has been the motto of at least this one bureaucrat. Therefore, having intimate knowledge of the existing conditions among school children of every class in every county; and resolving not to rest until some sincere, practical effort toward removal of remediable physical defects was made, the Bureau of Medical Inspection of Schools of North Carolina State Board of Health has undertaken to organize tonsil clubs and free dental clinics as one method of approach to a solution of the problem.

Passing up the matter of examinations, our answer to the challenge to do something has been to (1) conduct free dental clinics in 65 of the State's 100 counties up to January 1st, 1922, in which 66,452 children received free treatment through dentists paid exclusively by this department. Those children were all between the ages of 6 and 13 years old and came from every class of people, rich and poor, white and black, city, town and country, practically every township in the 65 counties sending children to the clinics. (2) Conduct tonsil and adenoid clinics in 48 counties, operating on 3,595 children, most of whom would never have had a chance otherwise.

"Knowledge is proud that he knows so much; Wisdom is humble that he knows no more." We are not proud that we have done so much, we are only sorry that we have not been able to do more, and to do it better.

## DENTAL CLINICS

The organization and support of free dental clinics for public school children was undertaken after long and careful study of the history of all such ideas and attempts toward such a system here in North Carolina and elsewhere throughout the United States. We endeavored to profit by taking warning from the mistakes of others. Our whole plan is based on necessity and rigidly observes certain fundamental principles. As stated elsewhere in this publication, poverty is by no means the most important cause of dental neglect. Thus the first principle laid down is, we do not





All of the smaller of these pupils in a Granville County school have had their "teeth fixed" by a dentist employed and sent there by the N. C. State Board of Health. Many of them took their first look at a dentist; but all seem pleased.



The City of Charlotte's Free Dental Clinic for school children in practical operation. Picture shows dentist at work in the handsome new permanent dental infirmary situated in the Junior High School, and open free to all pupils of the Charlotte schools between the ages of 6 and 12 years inclusive. This infirmary was established and put in operation last fall, through the efforts of the Superintendent of the Charlotte Public Schools in cooperation with the North Carolina State Board of Health.

classify the children into rich and poor, able and unable, or otherwise, with the resulting consequence of placing the whole enterprise in the realm of charity and pauperizing the children. The clinics are open to all classes alike; and not a penny is accepted from any child treated in the clinics; it is a free clinic paid for out of public funds just as the public school is supported. The second principle established is that under no circumstances is voluntary service on the part of any dentist, no matter how sincerely tendered, accepted; because to begin with no special class of people such as dentists should be called on to make sacrifice in time and labor for a cause that is a responsibility resting on the whole public; and in the second place we would unconsciously be pauperizing again; and in the third place and most important, the enterprise is strictly business and is financed through public funds identically on the same basis as the public school itself. The third principle rigidly enforced is that each dentist while engaged in the work is never allowed to treat anybody except school children between the specified ages, and under no circumstances is he allowed to accept pay or do work outside of hours, even at midnight or Sunday. Fourth, children between the ages of 6 and 12 inclusive are treated. The purpose in this is to take the children as young as possible in order to get them interested in a clean mouth, so that when they reach the age of 13 when most of the permanent teeth should be in place, they will have pride enough, and knowledge enough of the importance of a clean mouth to keep it clean and to establish regular and permanent relations with a good private dentist for the balance of life. Fifth, emphasis is placed on prophylactic work and permanent fillings in sixth year permanent molars. Much work is done for temporary teeth, but as little extracting as possible, and no pulp or frontal work is undertaken except cleaning or treating a diseased pulp temporarily to relieve pain, pending a trip to a private dentist.

The work is hard, requires industry, application to duty, sincerity, honesty, efficiency, tact and above all patience and ability to handle children, and a genuine love for the cause, on the part of the dentist. Sometimes the clinics are crowded, and some parents do not get as much work done as expected, sometimes they misunderstand the purposes and scope and limitations of the work and complain, sometimes the children are hard to manage. Often the dentist finds himself in a school with only two days time assigned say, and finds conditions unusually deplorable and more work than he could do in a week. So when the teachers select the children to be served others are disappointed. In such cases it becomes necessary to treat all the children doing only a little for each, and consequently the results are not satisfactory. Sometimes the dentist's Ford breaks down or he encounters a bad road and loses time, with the result that more children are disappointed, and the per capita cost of his work is raised by just that much time lost. But on the whole, there are many more expressions of satisfaction and commendation for the good the service is doing than there are kicks.

Each dentist when beginning work is expected to own a Ford, preferably of the touring type. He is supplied from the office of the Board with a student's portable foot dental engine, a small cabinet, a portable McConnell Jr. wooden folding dental chair, a sterilizer, and all necessary operating instruments and supplies. This equipment is packed in the Ford and the

dentist on reaching the schoolhouse, health office, court house or wherever his clinic for the day or for the week is to be held, can set it up ready for work in about 15 minutes. The school or health authorities or both are required to assume responsibility for arranging the itinerary of the dentist while in a county (the county is the unit of activity) and to be responsible for the attendance at the clinic and to say which children

## NORTH CAROLINA STATE BOARD OF HEALTH

### FREE DENTAL DISPENSARY RECORD

DISPENSARY POINT..... COUNTY..... FOLIO..... PAGE.....

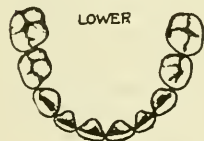
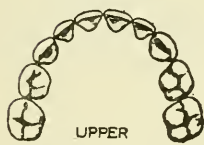
Name of Child.....Name of School.....

Sex.....Color.....Age.....Date of Treatment.....

Name and Address of Parent.....

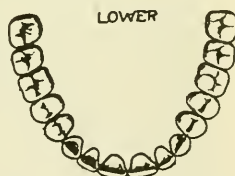
(Draw lines from each class of Treatment  
to each tooth treated)

#### TEMPORARY TEETH



- Teeth Extracted
- Superficial Decay Removed
- Cavities Treated with AgNo<sub>3</sub>
- Abcesses Treated without Extraction
- Teeth Cleaned (check with X)
- Cement Fillings
- Guttapercha Fillings
- Pulp Capped (emergency)
- Permanent Teeth Lost
- Amalgam Fillings

#### PERMANENT TEETH



What is general health of child?.....Any teeth too bad for dispensary treatment?.....Was

anesthetic used?..... Was stimulant necessary account syncope?..... Does child use toothbrush?.....

Are child's tonsils affected?..... Did parent and child appreciate service?..... Was child referred to

private dentist for any part of work?.....

Estimated cost of treatment to child if done in private office (based on local charges) \$.....

Remarks:

(Signed).....D.D.S.



shall have first opportunity for the service. In short the local authorities select the children, only school children of specified ages, of course. The salary of each dentist to begin with is \$150 per month, with an expense allowance of \$100 per month. All materials and supplies for use in the work is supplied him through a jobbing house and paid for by the Board. He is required to defray his own personal and traveling expenses. Each dental unit costs the Board in equipment and total expenses about \$4,000 annually. Each man treats on an average about 75 children per week. In 1921 the per capita cost for each child treated was \$1.04. This included the salary and travel expenses of a dentist who acts as field supervisor and who is responsible for the technical character of the service. The work is paid for by the State Board of Health from funds appropriated by the Legislature for the purpose. Many local boards and some civic organizations are this year supplementing our funds. They are allowed to do this by reimbursing the department for as many additional weeks as they wish at \$75 per week, after the dentist has remained as long as we can allow him.

The dentist is required to keep a careful individual record of just exactly what he does for each child. A copy of this record is published above. It will be noted that the record not only gives an accurate description of the technical work done for the child; but also states the dentist's opinion of the general health of the child, as well as the name and address of the child and parent, and name of school which the child attends. The records are sent to the office at Raleigh and are carefully filed, not only as a scientific report concerning each child treated, but as a receipt for the expenditure of the funds.

### TONSIL AND ADENOID CLUBS

The responsibility for this experiment in the effort to "do something" is simply a case of necessity proving again to be the mother of invention. This plan was devised because all other efforts to produce results in this field had proved utter failures, both from an educational standpoint and otherwise. So, when the Director was confronted with the bold fact that there were scores of thousands of school children in the State, in need of a simple surgical operation and next to nothing being done about it, this challenge was accepted and honestly answered in the program described below.

Whether or not, as some medical authorities believe that the common soft, mushy sweet type of food served to small children is a cause of increased prevalence of diseased tonsils and adenoids; whether or not decayed teeth is a cause as many authorities think; whether or not the condition is due to overheated, overcrowded, ill ventilated homes and school rooms as still more authorities assert, this writer does not know. It may be that like appendicitis and some other diseases, the medical profession and the public know something about the matter now, whereas a generation ago little or nothing was known about the subject. But there can be no question that there are many thousands of children in North Carolina whose physical development is being retarded on account of disease of tonsil and adenoid glands.

The first operations done for tonsil removal was in Holland about 100 years ago. The practice was followed for several years, specialists soon

establishing themselves in that country and France and England. But after doing the operation for several years the practice ceased, due according to most medical historians to the fact that there was no general anesthesia, like chloroform and ether, known, and the modern methods of hemorrhage control being lacking, the operation was so excruciatingly painful and dangerous, that the simple dictates of humanity demanded the discontinuance of the practice. However, like all real problems the issue had to be met again. So about 15 or 20 years ago the practice of removing a portion of tonsil tissue was adopted by many physicians. The idea probably being based on the hope that the remaining tissue would contract and give no more trouble. The specific function of the tonsils not being known, it was thought that the presence of some of the tonsil tissue, even though diseased was preferable to complete removal. Of course it was a foolish idea, and the resulting scar tissue made the condition worse than ever; and physicians now agree that there can be no question of the benefits resulting from clean, and complete removal when diseased.

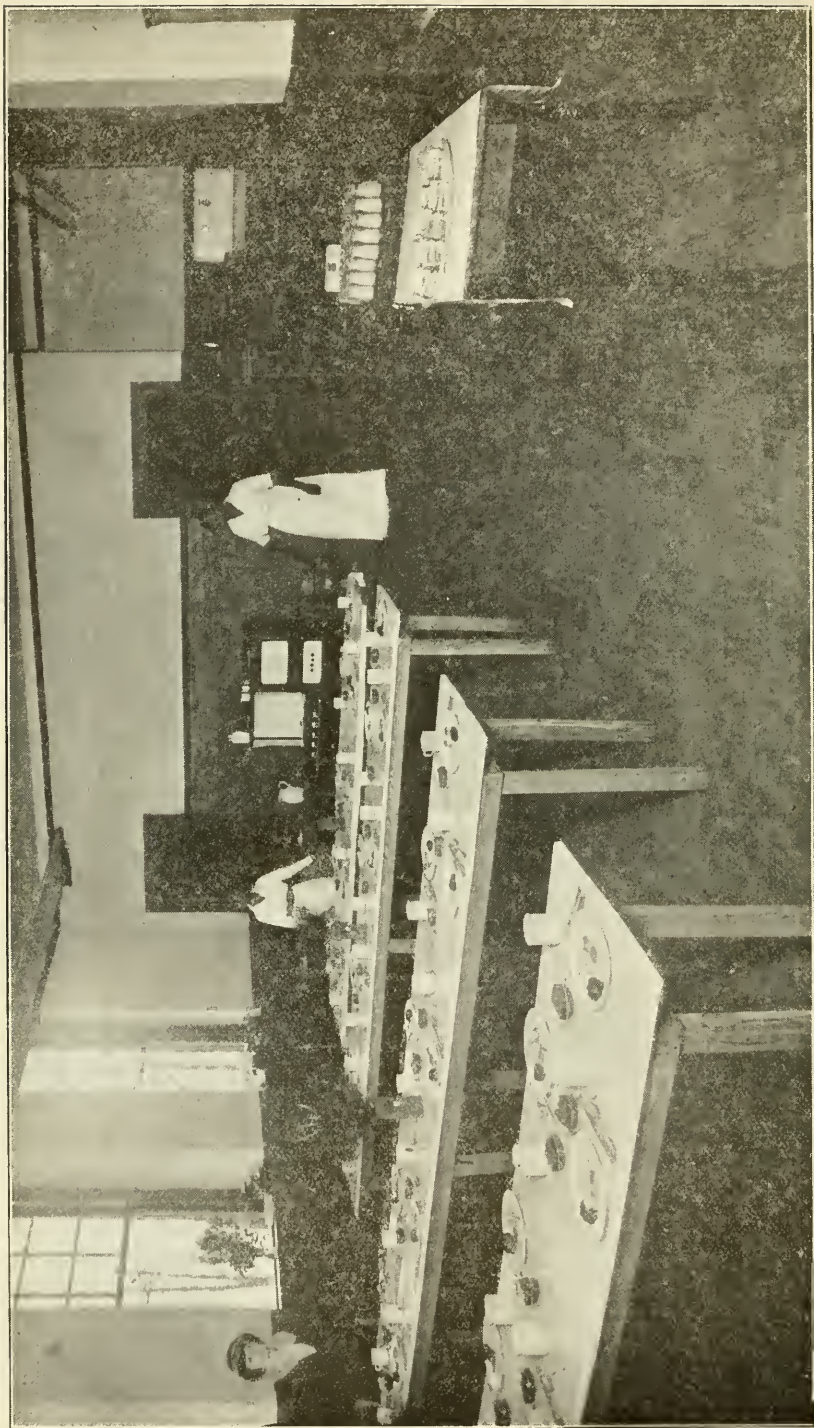
The above items of technical history are cited, not by way of digression, but to illustrate the problem which we found difficult of approach. Today, teachers and pupils, parents and the public generally, thanks to our tonsil clinics in about half the State, are familiar with the necessity for operation and the results of continued neglect. For the most part when clinics have been held the necessity for a satisfactory adjustment between the profession and the people is all that remains in the way of having permanent facilities established.

North Carolina has throat specialists, and good ones, and about twenty-five of the best of them have given us their loyal and unqualified support in our efforts for these defective children, therefore making the chief object of our enterprise a success. That object has been to act in the capacity of bringing the defective child and his parents and a good specialist together, in a purely voluntary arrangement whereby the specialist can ethically place his service at the disposal of said defective child to the everlasting benefit of the child without sacrificing the time of the specialist and without pauperizing the child.

After organizing this bureau and starting the work at first through teachers and later followed by physicians and nurses, five years ago, a veritable chorus of "can't you do something" poured into this office from a thousand places in the State. From teachers, parents, medical inspectors, nurses, the refrain was always the same, during about one whole year while we were grappling for a way out. In that year this writer as Director of the work, wrote letters to physicians, city and county and school officials, cooled his heels in more than one specialist's waiting room; only to be met with the parrot like refrain "advise them to see a specialist," "advise them to see their family physician," "send them to us and if they can't pay we will operate anyhow."

We tried it all, a ton of advice was handed out, if any of them ever took it we were never able to find it out. And who was to carry the children to the specialists? We could not, the parents could not or would not. And still the requests came in ever increasing volume, for something to be done. Our answer was to evolve the plan of group operations.

In inaugurating this clinic plan we have simply adopted the modern idea of teaching by clinical methods, and at the same time we have done some-



A section of one of the hot lunch-rooms in one of the Charlotte schools. All are ready for the "noon ball." Note the liberal supply of milk, and the spotless cleanliness everywhere evident.



thing specific to aid several hundred children. In the conduct of this division of our work we have adhered scrupulously to several fundamental principles. First, instead of employing a single operator on a salary which would have been easier and cheaper, and which would have enabled us to make the clinics free to everybody exactly like the dental clinics; we have considered that our basic effort should be the permanent introduction of the capable operators of each section to the people who most need their services. Therefore we have employed good operators who were in sympathy with our efforts, in their private capacity as surgeons, compensating them by paying them a sum of \$100 per day and expenses for each day's operating, instead of paying them a fee for each child. Again treating a child's teeth is not dangerous, and the employment of a dentist on a salary for his whole time is on an exact parity with employing a physician for his whole time on a stated salary as a county health officer. Further, every surgical operation requiring a general anesthetic is a matter of life and death to the patient. So we have employed men of established reputation in their communities. Thus we have accepted, charged if you wish, a small fee of \$12.50 which is paid voluntarily by those having it to pay. We found that if twenty children were operated on each day and three-fourths of them paid the fee, one-fourth or five children would be taken care of totally free, at the expense of their more fortunate neighbors, without wounding the sensitiveness of poverty, and without subtracting from the value of the service to the children who did pay or adding to their burden financially, and at the same time the specialist is receiving a fair compensation for his service. And what is more important he is having an opportunity to use his talents fairly to assist those most needing him. In following this principle our methods are as far from the taint of "socialism" or "State medicine," whatever that is, as the east is from the west. In this as in the dental clinics we do not classify the children. To advertise a clinic for poor folks or paupers only would mean no clinic and nothing done for anybody.

Second. Here as in the dental clinics we only accept school children from 6 to 12 years of age inclusive. After a child is 13, the benefit from the operation is not always as marked because often the damage from adenoids especially has been done; and here again our idea is to teach the necessity for the operation when needed, at an early age. The third principle has been to select children from as many homes throughout a county as possible and to admit no child except on terms of absolute equality with every other child; and all at the voluntary request of the parent or guardian.

The unquestioned success of this enterprise has been due in large part to the hard work and loyal service of a few exceptionally well trained school nurses. The work is simply following the school examination with an example of one definite, specific method of helping folks with something besides advice; and at the same time offering a concrete illustration how each community can subsequently help itself if it wants to.

We have taken advantage of one common human trait and that is that any accomplishment is relatively easy if the mass of the people concerned can be interested. Thus we use the county as a unit, and assign one nurse to a county at a time to make the follow-up examination and arrange for a clinic later. The clinic is held sometime between April and November.

One physician, who makes a careful examination of each child, including heart, lungs, urinalysis and everything bearing on the child's general physical condition, and who acts as anesthetist is employed for his whole time. An available specialist is secured for each individual clinic. A corps of eight nurses with an orderly and the operator and anesthetist constitutes the clinic personnel. A one-ton truck with a special body large enough to carry all the necessary equipment for a clinic, driven by a man who acts as general helper and orderly, and accompanied by the anesthetist, carries all equipment through the country from one county clinic to the next. This equipment consists of 25 gold medal cots, comforts to be used as mattresses, sheets, pillows and pillow cases, night gowns for the children, towels, blankets, operating table, sterilizers, tonsil suction, sterile supplies, ether and everything needed in a hospital of the kind. Every clinic commences on Tuesday morning of each week and continues as many days consecutively as necessary up to a maximum of four. The outfit is set up in any good building, preferably a school building, where heat, light, water, and sewerage, if possible, is available. Approximately 20 children are operated on each day. One or both parents or other close relative is required to accompany the child who reports at the clinic without breakfast early in the morning. After examination by the physician in charge and being found free from contagious disease and a fit subject for the operation, the child is passed over to the specialist for final examination to establish unequivocally the need for operation. Next, each child is undressed and a clinic gown put on and put to bed in a cot to await his turn for the operation. The boys are placed in one room, the girls in another, or either all in one big room with a dividing curtain. As soon as a little patient is returned from the operating room a nurse together with the parent remain constantly by the bedside until he is over the effects of the anesthetic. Having a large number of children together has been one of the best features of the plan. Each on recovering consciousness after the operation immediately becomes interested in what is going on around him and therefore has a tendency to forget his own "misery." Then too, the parents seeing and knowing intimately what is going on are reassured and all of it conduces to general peace of mind. The operations are continued through the day when commenced and generally an operator has no trouble in completing the work without hurry in from 4 to 6 hours. Everything is systematized down to the last detail; and some of the most technically perfect work ever done by operators any where is done in these clinics. Every child is kept in bed overnight under the care and observation of a night nurse on duty constantly. In the morning following operation after examination by the operator nearly all are found in good shape ready to be dressed and sent home. The whole place is quickly cleaned, fresh laundry, sheets, etc. placed and everybody ready for another day's work. If any little patient indicates in any way that he is not in condition to be carried home with absolute safety, he is simply kept in bed until he is all right. The nurse in charge of the county work handles the finances, she alone knows who pays the charge and who does not. The operator does not know and does not care which children are accepted for charity. The whole enterprise is on an absolutely democratic basis. The child of the millionaire and the child of a pauper may be in adjoining cots, figuratively speaking, and of course each is equally welcome to the clinic as it is an

educational enterprise. The nurse makes a careful detailed report to the Director of the Department and all such records are among our most carefully guarded and highly prized possessions.

### SOME EXPRESSIONS FROM THE PUBLIC

Naturally everybody has not been fully pleased and satisfied all the time everywhere. Some people have not understood our purposes; others have not been considerate enough to allow at all times for our limitations; and still other people take a peculiar pleasure in discrediting the efforts of public officials all the time as a matter of principle. However, as evidence that the Department has functioned, and that results many times more than commensurate with the cost have been produced, we are here publishing a few of the many expressions of commendation from various portions of the State. Not one of these letters was solicited, but all came gratuitously from interested friends and officials.

#### From Polk County

(KATHERINE C. BEATSON AND NELSON JACKSON JR., in the Polk County News.)

"Wealth alone cannot make a community or state, but upon the uses to which that wealth is put depends the future of the community, state or nation.

"During the past week Polk County has had shown in a very forceful way how a part of the income of the State is being used.

"We refer to the wonderful, yes very wonderful, medical clinic conducted in the school house of Tryon for every part of Polk County and also for neighboring sections in a few instances.

"A clinic of this kind could be very successful from a medical standpoint and yet fail in another, but vital respect. Every operation could have been successful and yet the patient and parents, could have derived no other benefit than the mere treatment of the child. But this clinic was conducted by members of the medical profession and graduate nurses whose sympathy and great kindnesses shown in every case endeared them to every one with whom they came in contact in any way. Although 90 children were operated on for tonsils and adenoids, every operation was treated as a special case and there was never the feeling that there was a wholesale job to be performed in a certain length of time. Instead, every child was apparently considered as a life at stake and a future citizen of North Carolina to be benefited if it was in the power of the nurse and doctor to do so. Also, that that child's parents should be considered and encouraged over a big forward step for any parent.

"The educational advantages derived from this clinic conducted by such an efficient organization are without limit and cannot be estimated in figures. It will suffice to say that the county quickly recognized the very human side of those in charge and brought the children in greater numbers than could be cared for, feeling, as many expressed themselves, that real talent was there to look after the little ones."

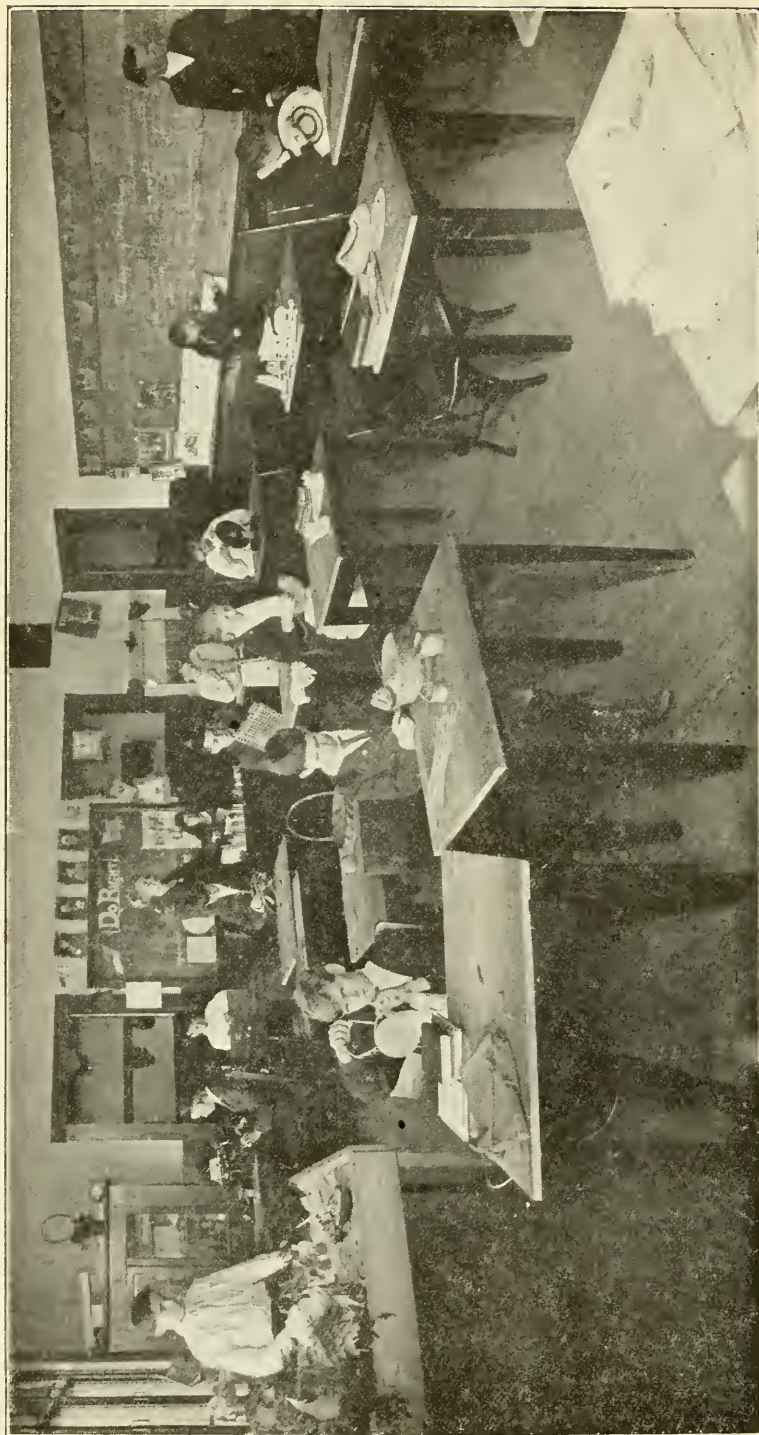
#### From the County Superintendent of Schools of Polk County

"Just a word about the tonsil and adenoid clinic which has just closed in this county. I consider this one of the great events in the history of our county. The work was a success in every respect. I appreciate the untiring efforts, both of you and your department, in making this work mean so much to our people."

#### From Another School Official of Polk County

"The dentist has done a great work here, and I believe that it has done more to make a certain class realize that they are a part of the State





Teacher and "Opportunity Class" in one of the big public schools of C\_\_\_\_\_ In this school of about 400 pupils and 10 grades, as in every school of like size, there were about 40 pupils remaining after all remediable physical defects were remedied, who were grade repeaters, some of them classed as incorrigibles, and all of them hindering the normal progress of all the grades, and making discipline impossible. The superintendent solved the problem, just as every superintendent can if he will, by establishing an extra grade, selecting a teacher because of her peculiar qualifications, and calling the new grade an "Opportunity Class." The name itself suggests inspiration, and carries no stigma. After being segregated in this manner and kept busy at tasks they can do, the question of discipline for the whole school has been solved, and all school work given a decided impetus.

government than anything that could have been done. And too it has kinder paved the way for your tonsil clinic."

#### From the County Superintendent of Chatham County

"Please allow me to thank you for the clinic which you gave our county. I wanted to see you and talk with you in person but it seems that every time I have been to Raleigh you happened to be out of the office.

"In my opinion this adenoid and tonsil clinic was the greatest single service that has ever been rendered to the children of our county. Out of 110 operations all were successful.

"There was one thing, however, connected with this clinic that was unusually sad and that was to see so many children that had to be turned away for the lack of time and room. Now, I realize that some of these parents will have this work done anyway but the vast majority carried those children home where they will have to continue to suffer. Now, Dr. Cooper, I realize that you have been unusually nice to us and I don't want you to think that I am trying to persuade you to do more for our county than you have time to do; but I was wondering if it would be asking too much of you to give us another clinic for next year? I certainly hope you can arrange to give us a clinic next year as so many of the people are asking me for it.

"Please allow me to again thank you for the service you have rendered us."

#### From a Public Health Nurse in Cherokee County

"This is just an unasked for word to say to you that the people of this county appreciate the great and good work of the State Board of Health.

"Only today a teacher here told me of a little boy whose father and mother had tried to pay him with dollars to have some decayed teeth removed, and he would not, but when the dentist came, he went with the teacher and without any coaxing or bribe had his teeth extracted. The father and mother (prominent and well to do people here) were greatly pleased.

"Another child was considered stupid and hopeless in the 1st grade, but after the nurse found his eyes defective and he got glasses and could see, he is starring in the 2d grade this year.

"Every tonsil case operated on has been greatly benefitted and a score of parents have asked me when we will have our next clinic, as they wish their children's defects corrected.

"As a means of enlightenment and education the clinics are worth ten times more than cost and I cannot feel that your wonderful program for our rural children will ever suffer at the hands of our legislators. We mountain people deprived of so many progressive aids to a higher type of citizenship need more than the people of any other section to have these helpful things.

"I thank you more every month for sending us the help you have and I am looking forward to calling on you many times in the future. THE PEOPLE are with you."

#### From the County Superintendent of Schools of Montgomery County

"The dentist is in a consolidated school district this week. We are using the large school trucks to bring the children from the rural sections of the township. This is no doubt the greatest good that has come to the children of this county. They are so eager for the work that the task of advertising and boosting the work is a real pleasure.

"It is a pleasure to visit the schools of the county and see the children who were in poor health last year, on account of diseased tonsils, looking well and happy. The educational feature alone has helped to create a better school spirit in our county."



State Board of Health School Nurse at work in Person County. She is here shown engaged in making an inspection of a child's throat, following the previous inspection by the boy's teacher. If the parents, the teacher, and the nurse think a operation for removal of tonsils and adenoids is necessary, the question will be left to a physician and the surgeon who would operate for final decision.



State Board of Health School Nurse making the Snellen test for defective vision of a school girl's eyes. This photograph was taken in Person County.



### **From the County Superintendent of Schools of Person County**

"The dentist did fine dental work for our school children. The people of the whole county are delighted over this great work of the State.

"I plead for you to do all you can for us and at an early date as possible."

### **From the County Superintendent of Schools of Randolph County**

"The dentist is getting along fine and having more work every day than he can do. We like him very much."

### **From a Public Health Nurse in Randolph County**

"We are having a fine clinic. Every child loves the dentist. I really think this is the best thing North Carolina has ever done for the children and they appreciate it more than anything else. We have little six-year old children who come alone and get up in the chair, have their work done without a murmur. The doctor never tells them a story so they have perfect confidence in him. I am so glad you sent us the man you did."

### **From the County Superintendent of Schools of Richmond County**

"I feel somehow or other that I, as Superintendent of the County, am due you and your Department a word in regard to the very successful Tonsil-Adenoid clinic which was held in this county and completed, some three weeks ago.

"I wish to tell you that the conduct of the emergency hospital, and the operations upon the sixty-five children, during the four days you were here, was in every particular, so far as I could judge, all that it should have been.

"The children were given the best of treatment and the most painstaking attention by specialist and nurses, who were competent, efficient and sympathetic.

"Three weeks have passed, and I have taken pains to inquire as to the results, and in every case these children recovered quickly from the operation. There have been no unfavorable results. In every instance the parents of these children are thoroughly delighted with the great magnanimous service that the State has rendered them.

"In fact I might go further back than that and say that the nurse that you sent into the county to make the physical examination of the school children last winter was exceedingly tactful and helpful in the way in which she met the people and the manner in which this preliminary work was done. This in itself was a long ways toward giving our people the confidence in the clinic which it was necessary that they should have. From start to finish every detail of the work was done, you might say under my immediate eye and I wish to tell you frankly that I have no unfavorable criticism to make and nothing to say except in praise.

"And when I think of the great physical and mental benefits that are to follow this demonstration in our county, I am led to believe that the State is nowhere spending money that brings such valuable returns.

"Thanking you and your Department in the name of, and in behalf of, the little children of our county, I am."

### **From a Taxpayer in Stanly County**

"The great work accomplished through your representative dentist is highly appreciated. The work being done for the school children of this county is one of the best laws ever passed by any state. What it means to thousands of young children of the State to help them solve the problems of the future!

"The people of this township, especially the committee, the patrons, children, can testify of the noble work. When we see someone helping others, we ought to join in the work and make it a great success.

"May the spirit of success be supreme in the heart of every individual. Success to you and your noble work."



Group of Watauga County children dressed and ready to start home on the morning after operation in the N. C. State Board of Health tonsil clinic at Boone, August, 1921. The mother of one of these children brought the child to the clinic ten miles over mountain roads through the rain, the mother riding one mule and leading another one on which rode the child.

Tons of literature is being written now and distributed by hundreds of individuals and organizations on the subject of proper nourishment for children.

Here are two boys aged 12 and 2 years old, respectively. One of them, the 2-year-old child, is exactly normal in height and weight, and has to be prized away from the table. He eats everything his mother will let him. With the exception of an attack of diphtheria at one year old he has never been seriously sick. The 12-year-old boy is normal in height, but 8 lbs. underweight. History: At 8 months old he had an attack of colitis which lasted six weeks. At six years old he had a severe attack of dysentery. When seven years old he had an attack of diphtheria resulting in mastoid complications which required a double mastoid operation that nearly cost him his life. At eight his tonsils had to be removed. He has always had a genuine idiosyncrasy against milk. He is making gradual though slow progress toward normal. Suppose he had lacked for the best of attention, both parental and medical, as thousands of children do. He would, of course, have been dead. The point in this story and this comparison is naturally to call attention to the supreme importance of keeping children well through their first years and of removing remediable physical defects, as well as giving them proper food.



### From a Dentist in Stanly County

"The dentist spent last week in our local school working for the children. I heard one of his lectures and saw a good bit of his work. I feel sure that this is going to mean great good to the health of the community and has caused an interest among the children that was not there before he came. I am sure this is a good work and wanted you to know how I felt about it."

### From the County Health Officer of Surry County

"Having lost the copy of my report of the dental campaign conducted in this county, I would like for you to have a copy of this report sent out from your office to me as I am making my annual report. As this is one of the most valuable pieces of work done in the county I cannot well afford not to go into detail as to this clinic."

### From a Specialist of Washington, Beaufort County

"I returned from Plymouth a few days ago where I did the operating in a tonsil clinic which was conducted by the State Board of Health and the Washington County Board of Education.

"The patients were well cared for and remained in the hospital for twenty-four hours after operation. Certainly no patients could be better prepared or cared for in private practice.

"In my opinion the greatest value of your tonsil clinics is due to the fact that in them many school children get the benefit of treatment who would never be reached in private practice."

### From a Very Eminent Practicing Physician of Warren County

"Now that the tonsil and adenoid clinic has come and gone I want to write you a few words of commendation and appreciation of it. To begin with, the nurse deserves great credit for the preparation of the "hospital," which was well arranged, and clean. The specialist did beautiful work; he was so thorough; and so careful was his technique that of the large number of cases he had, there was no trouble afterwards. The nursing care of the patients is to be noted also; they were carefully wrapped before, during and after the operation, so they would not catch cold; and they were tended during recovery from ether with great care, and under strict observation thereafter for any excess bleeding.

"Great good was done here by the clinic, and you are doing a great work for the State. I trust the clinic may visit us again at an early date."

### From a Public Health Nurse of Watauga County

"The children from our tonsil and adenoid clinic have all gone home, apparently in splendid condition. I know that you have been receiving a daily report of the work here, but I doubt if you can get a very clear picture of the difficulties under which this victory has been accomplished. Only an abundance of FAITH in your clinic could have urged the people to leave their homes in the pouring rain of the first two days, and carry their children over many miles of roads made impassable by the rain and mud. But they did come, so that we were able to have a full number every day. Isn't that just fine?

"Dr. Cooper, I certainly am grateful to you for giving us this clinic again this year. The people certainly do appreciate it. It is such an opportunity for folks so terribly isolated. One boy rode in the pouring rain, sitting behind his father on a mule. Another mule carried a father and two sons eight miles, over terrible roads. They managed by taking turns riding.

"Everything went as smooth as clockwork all the way through the clinic. The specialist was a perfect success. The nurses did a perfectly splendid piece of work. I do think it is perfectly splendid the way you



have worked this work, from nothing, only a few years ago, to the splendid piece of machinery operating in the State at the present time."

#### From the Superintendent of Schools of Watauga County

"I felt that I wanted to express to you my appreciation for the school clinic just closed at Boone. It was a splendid success as was the one last year. Our people are very appreciative of this work. I feel that it is doing more for the children than any other one class of work put on by the State. It would be nothing short of a calamity if this work should be discontinued."

#### From One of the Department Nurses in McDowell County

"I had an interesting experience this afternoon. I went up on the C. C. & O. railroad between trains to get to a negro school, which is about half a mile from the station. I had just a little over an hour between trains, so I had them to meet me at the station for the examination. When I stepped off the train twenty-two children were lined up like soldiers along the track, headed by the teacher and several colored men and women who were interested. The children were so clean and well dressed it would put the whites to shame. Most of the girls carried bunches of flowers and they might have been taken for a wedding party. The line was perfectly straight and their gay flowers could be seen all down the line. After the inspection was over they delivered a song and a yell, especially prepared for the occasion I think, and then I was presented with all those flowers. The train was late, so I did not have to hurry and I thoroughly enjoyed them. They came and went in perfect order and as the teacher marched them off on the little mountain trail towards the school again I felt like weeping. I don't know why, but that line of children passing so silently out of view has haunted me every minute since nearly."

"One white teacher away out in the mountains marched her little folks three miles (six miles round trip) to get them weighed, and that little school keeps bobbing up before me. It was there I think I found trachoma. We are going to try to get the children in for an examination by a specialist who comes here every Tuesday."

#### From a Negro School Teacher in Duplin County

"I may be late but I want to express to you my appreciation of the dental work that is being done for the negro children."

"I think it one of the very best investments the State ever made. And I think the credit belongs very largely to you."

"I hope the dentist now in the county or another may get to this county again and next time be allowed to stay until every child is treated."

"I thank you, Doctor, and wish you a long and useful life."

It is unfortunate that children have to go to school at all. From the standpoint of health they would be much better off physically if they could grow up like young animals. But the complicated machinery of life which requires them to be educated and trained in order to make useful citizens out of them demands that they be sent to school most of their earlier years. So, if society, the State, requires them to be sent to school, the State must ensure through proper health teaching a minimum of damage to natural growth and health.

## TEACHING HEALTH IN THE PUBLIC SCHOOLS

The teaching of health and hygiene in our public schools has always, even to this day, been nothing short of a farce. In the language of Dr. Richard Cabot it has always been the "yellow dog among the studies of the school curriculum." No one particular section of the country has been more at fault than another. We have all been guilty. To save time and evasion, we may as well admit that the basic trouble is because the majority of the teachers themselves do not know much, if anything, about the subject. Is the teacher to blame for this state of blissful ignorance? No, not in the least, particular. Who, then is guilty? Clearly, and unmistakably the schools and colleges that make a business of training teachers. They have one and all utterly ignored this great and necessary field. To the present not an institution in North Carolina has ever offered a thorough course in practical and theoretical public health and sanitation including personal, school, and public hygiene, with credits toward a degree on mastering the course. Whenever an institution does offer anything approaching such subjects as a sop to progressively inclined teachers the course is made optional, is restricted to a few dry lectures and placed at inconvenient hours. As a criticism of anything without offering a remedy is unfair, we may reasonably ask "What ought to be done about such a situation?" The answer is plain as daylight. Require every school and college offering training to teachers, or attempting to teach higher education, to equip a department of Public Health and Sanitation with a full professor in charge. Place the head of the department on an equal basis in regard to rank and pay that is enjoyed by the department of Mathematics or English, require just as many hours in the curriculum and credit the student with just as many points in the pursuit of a degree. In addition, and more important, make the course compulsory. Such a course should and would cover personal, public and school hygiene of every description, and also the field of physical education. It is needless to say that in such a course the ancient practice of learning to name the bones in the body and the twelve signs of the zodiac, which has done so much to disgust every pupil in the so-called study of "physiology," would receive precious little consideration. So much for what should be done for the teacher of the future. Now, what can the teacher who has been taught nothing do toward imparting elementary information to the pupils in the public schools?

The teacher must first seek and obtain information before attempting to interest the pupils in health subjects.

The subject must be made attractive to the child and his interest must be held from the beginning.

The teacher should bear in mind that health education is not based on a textbook, but concerns every moment of the child's daily life. Any teacher may obtain free special pamphlets on many subjects such as "The Care of the Teeth," "Adenoids," "Eyes" etc. from the State Board of Health at Raleigh. The United States Public Health Service at Washington is able to supply free to teachers some excellent information on various subjects. A small book, "The Teaching of Hygiene in the Grades" by J. Mace Andress, and published by Houghton Mifflin Company, New York, may be obtained at a nominal cost, and presents some practical information. "Healthy Living" in two small volumes, by Winslow, published by Chas. E. Merrill Company.

New York, is also simple and instructive in teaching children. The same may be said of the Ritchie Primers on Health Subjects published by the World Book Company of Yonkers, New York. A simple and good program which the teachers can easily carry into effect is sent out by the Modern Health Crusade of 370 Seventh Avenue, New York City. So, with a very little trouble on the part of the teacher it is easy to acquire a deal of information which will enable them to present these matters to the children in an intelligent and attractive manner. To make the subject interesting to the child, we must depart altogether from many of the foolish methods pursued in the past. In beginning the teaching of hygiene in the schools, naturally the most important thing to do first is to search out and find any individual personal, common defect with which any child may be suffering, such as a diseased throat, defective vision or hearing, decayed teeth or undernourishment. The question of nutrition should be one of the most important concerns of the teacher. A child who is not eating a sufficient quantity of food (regardless of the reason) or of the right kind of food, with resulting underweight and mental ineptitude is unfit to pursue any school duties. The blackboard is of no use to a child sitting in the back of the school-room if his vision is not up to normal. No teaching, it matters not how attractive, will interest a hungry child. So then the most important feature of the beginning is the teacher's inventory, we may call it, in which all the defective children are discovered, their condition carefully studied and every effort exhausted to get them treated and cured, and a proper dietary instituted. This step covered carefully and thoroughly, then let the main idea run, like a golden thread, consistently through all further efforts at teaching health and hygiene. That main idea, or code, is to teach the child to love good health for the sake of good health, because it is attractive and beautiful, and will make life happier and better worth living; and not because without health life is miserable. The teacher should keep the child's mind away from sordid and evil things, and death and damnation. He gets all of it with compound interest soon enough, but rather let the teacher keep the pure sunlight of health and happiness and noble things constantly before the children.

### PLAN FOR IMPROVING THE TEACHING OF HYGIENE

If each and every school in North Carolina could be induced to adopt and carry out thoroughly and persistently a program such as the one here suggested, in a few years a marvelous change for the better would be noted. This synopsis is simple and the suggestions are practical and easy to put into effect.

1. Establish health ideals.
2. Organize health clubs.
3. Encourage the formation of health habits.
4. Help the defective child.

Each of the following topics should be exhaustively studied and the pupils subsequently examined and graded according to evidence of knowledge acquired.

1. The ways in which disease is spread.
2. Fresh air, heat and ventilation.
3. Sleep, exercise and recreation.
4. Cleanliness—mind and body.



5. Posture and deep breathing.
6. Care of teeth, eyes, ears, and digestion.
7. Food and water.
8. Alcohol and tobacco.
9. Flies, mosquitoes and screens.
10. Sanitary toilets.
11. Accidents.

### Establishing Health Ideals

Teach children to seek Truth because it is Truth; and because it is noble and satisfying. Teach them to pursue health because health means beauty, happiness, success and contentment. They may be truthfully told that disease means poverty, suffering, ugliness, misery and unhappiness and death, but this fact should not be overemphasized. Teach them that Public Health simply means the sum total of personal hygiene and family sanitation applied intelligently to the community at large. Teach them that the average of health and happiness among the people of the town or school district can be no higher than the applied efforts of each and every individual and family in the district will justify.

### Organizing Health Clubs in the Schools

Every school in North Carolina should organize two health clubs, one for each sex, at the beginning of each school year. Each club should elect its own officers, the term of office should be one month. The officers should consist of a president, vice-president, secretary and most important of all an inspector. The officers should make a full report at the end of the month to the principal of the school. A copy of these two reports should be posted in a conspicuous place in the schoolhouse for the ensuing month. These officers should be required to make a daily inspection and record the condition of the toilets, drinking fountains, coolers or pump, heat, ventilation, light, floors. They should look out for obscene markings on walls, refuse on grounds and damage to desks or school property; and they should bring any guilty pupils to the teachers for punishment for infractions of such school rules covering the above. They should insist on each pupil having an individual drinking cup when necessary. They should see that the toothbrush drills are properly carried out at least once a week, and should request all pupils to keep face and hands clean and see that individual paper towels and soap and a place to wash hands are provided by the school authorities. In grading the pupils on conduct each month the report of the officers should be considered carefully by the teachers.

### Encouraging the Formation of Health Habits

The most important duty any teacher can perform in the conduct of a school is to aid in the formation of health habits. Nearly all human beings are creatures of habit. If good habits are formed in childhood it is more than likely that such will last throughout life. On the other hand bad habits will cling even more persistently.

To be specific, the teacher should encourage and require clean mouths and teeth, clean hands, faces and finger nails, upright posture in school, erect figure when walking, regular time for meals and visit to the toilet, courteous manner toward fellow pupils and the drinking of plenty of pure water from an individual drinking cup. The children should be urged to sleep

from eight to ten hours with plenty of fresh air in the room every night. They should be taught how to be unselfish and helpful toward others; and to avoid the use of slang and all kinds of "ugly talk."

The chief habits to warn them against is the use of tobacco in any form, especially cigarette smoking; the use of alcohol and tea and coffee. They should be told the truth about these things without exaggeration; and the truth is that each is a narcotic and harmful, especially to young people under 21 years of age. And most important to emphasize is the fact that alcohol and tobacco habits not only do harm but are utterly useless and expensive habits. Let it be distinctly understood here that this discussion concerns school children. Our professional opinion based on many years experience is that the important thing for parents and teachers to do is to exact a solemn pledge from all very young children to abstain from the use of tobacco especially until the age of 21. A habit formed after maturity cannot do the damage to health that it can before that time. If the young men of North Carolina see fit to burn up their own or their parents' money in the useless habit of cigarette smoking for instance, after they are 21 years of age it is absolutely no concern of the State Board of Health or the teaching profession. But it is our concern to defer the formation of this habit to the utmost during the time when all scientists agree that it is harmful.

### Helping the Defective Child

On the very first day of school or as soon thereafter as possible, before assigning seats to the children, the teacher should carefully test the vision and hearing of each child. The simple vision test made by using a Snellen's test card (supplied free for the asking by the Bureau of Medical Inspection of Schools of the State Board of Health, Raleigh) is sufficient. The hearing may be tested by using a watch or whisper test. Every child found to be even slightly deficient in sight or hearing should be placed near the front of the school room, nearest the teacher. The throats of all such children should be examined, and the teacher should not be satisfied until every defective child is treated and cured. The normally healthy pupils should not be allowed to designate their more unfortunate fellows as "silly Tom" or "foolish Mary" when in fact Tom and Mary when given a chance may turn out to be among the brightest in school. The teacher should write the Bureau of Medical Inspection of Schools, care State Board of Health, Raleigh, about all such children if they fail to get the local physicians or county authorities to provide the necessary treatment.

### The Ways in which Disease is Spread

It is most important for teachers themselves to know, and be able to drill into very young children the manner in which the more common diseases are spread. This simple information would be the means of saving many lives.

There are four serious diseases, three of them have always been present in North Carolina and have killed many thousands of our people, which are spread through the alvine (bowel) discharges. This is effected through the germs of the disease passing from the bowel discharges of persons having

the disease and getting into the drinking water or on the food which well persons later may drink or eat. These four diseases are—

Typhoid Fever.  
Hookworm.  
Dysentery.  
Cholera.

The germs of these diseases are easily carried on all fruits and vegetables and, all except hookworm, in milk and impure water. They may be prevented by the use of sanitary privies or sewerage systems, providing pure food, especially milk, and drinking water, and the careful screening of homes against flies. The breeding places of flies should also be destroyed. Vaccination is also a preventive of typhoid fever.

The diseases which are spread largely through discharges from the mouth and nose, and therefore require more or less personal contact are—

Tuberculosis.  
Diphtheria.  
Measles.  
Scarlet Fever.  
Whooping Cough.  
Mumps.  
Pneumonia.  
Influenza.  
Common "Colds."

One of the commonest methods of spreading these diseases among school children is using a common drinking cup, sharing each others food, using the same pencils and biting the ends, swapping chewing gum, and of course coughing and sneezing in each others faces. Naturally an overheated or ill ventilated schoolroom helps mightily in the spread of all of them.

Some diseases are spread by insects and are called insect-borne diseases. One of these, malaria, causes more financial loss through sickness than probably any other disease in our State. It is transmitted by a particular kind of mosquito known as the anophele. It could be prevented by drainage and otherwise destroying the breeding places of these mosquitoes, such as the old cups and cans and small pools around the houses in which water stands.

"Plague," one of the worst diseases in the world is spread by rats and ground squirrels which harbor fleas that spread the disease rapidly. Ticks, lice and bedbugs are all carriers of disease as are ordinary roaches.

Smallpox and chicken pox are diseases that spread by personal contact. Smallpox is easily prevented by vaccination; and all school boards should admit no child to school until successfully vaccinated against smallpox.

The older children, the boys and girls separately should receive careful instruction by a good physician on the spread and danger of the two terrible venereal diseases.

### Fresh Air, Heat, and Ventilation

Doctor Rosenau says that "Fresh air is nature's tonic. It stimulates digestion, promotes assimilation, improves metabolism, strengthens the nervous system, and increases our resistance against some diseases." He also quotes Macfie to the effect that "We may write and talk as much as we please about the horrors of bad air and the importance of fresh air, but we should never induce people to sit in cold drafts and shiver for the



sake of pure air, and, in fact, we would not want to do it ourselves." So we see that extremes in this as in all other hygienic matters should be avoided. Most sanitarians are agreed that the most vital element as concerns ventilation is the problem of regulating the temperature, moisture and motion of the air.

All modern schoolhouses should be built only after a capable school architect has drawn plans and a first class engineer has approved all features concerning heat, light and ventilation and plumbing. For the small buildings, the teacher should require the windows lowered from the top, and about one foot from the top a ten inch wide plank should be placed running full length across the window with the lower edge just below the sash and the upper edge directed toward the ceiling at an angle of about 65 degrees. The stove used, if not a jacketed one should be placed



"Playtime" at a North Carolina Public School. The teacher and the pupils are having a good time and taking plenty of exercise in the open air.

Equipment necessary—a sound healthy body, free from physical defects, and a teacher who cares.

in a frame box on a brick foundation. The foundation should be high enough, and the box frame big enough to keep the children sufficient distance away to keep from getting overheated. In this manner with the windows always kept lowered and the warm air from the breathing zone constantly arising to be replaced by the pure outside air, the problem of fresh air, warmth, and comfort is solved for all the occupants of the room. The children should be taught the necessity of air to maintain life; that air is present even in the soil and in the hardest rocks. Therefore it is essential to the

healthy growth of every boy and girl that there should be sufficient fresh air in the room to insure healthy breathing while asleep at night.

### **Sleep, Exercise, and Recreation**

No school child under 16 years of age should sleep less than nine hours every night. Children under 12 should sleep 10 hours. The child should retire at the same hour every night. Children generally get sufficient exercise and often too much if let alone. However, they should be systematic about taking exercise, even as they should be about all other affairs. There should be stated periods for play as well as for study or other work. Every schoolhouse no matter how large or small should have ample room for playground. No matter how expensive the real estate in the locality may be there should be no hesitation on the part of school boards to provide ample playground. In the country no school should be situated on a plat of less than ten acres of land. Playground equipment is of little importance as it is the outdoor games which is most important. Baseball for the boys, tennis for the girls, and "ring-around-the-rosy" for the little tots, is hard to beat for obtaining scientific exercise; and the equipment is not expensive.

### **Cleanliness—Mind and Body**

"A sound mind in a sound body" should be a motto constantly kept before children. It ought to be written on the blackboards on the walls, on the trees, and buildings and fences by the roadside; and every child should have a neat card-board print, carrying this immortal idea, hung over his bed. What is more important, it should be taken seriously. A sound body means a clean healthy body free from the effects of sin following transgression of the moral law. Free from laziness, filth, carelessness, intemperance; a sure enough fit temple for the abode of an immortal soul. A clean body cannot house an evil or unclean mind without soon becoming contaminated. Children should be constantly urged by the teacher to read good literature—some everyday—to choose good companions and shun evil. Soap and hot water are cheap and within the reach of everybody and children should be taught early to keep their bodies clean. A full "sanitary bath" as it is called in the hospitals, once or twice, or more a week, depending on weather and work; and a clean face and hands at school every morning do not cost a cent and carry a certain measure of self respect good for young children during the habit forming period.

### **Posture and Deep Breathing**

The spinal column of a growing child is much like a young sapling, if it "grows bent" it is more than likely to remain so throughout life. So if a boy or girl "gives way" to laziness, or sits "humped" in an ill devised school desk, round shoulders and "humpback" and an all round ugly figure will be the result. Furthermore, in natural, ordinary breathing exercised in normal walking, work, or talking, only about one-sixth of a person's lung capacity is utilized. It is in those portions of lung tissue not thoroughly aerated and expanded everyday through deep breathing that tuberculosis germs always find their first permanent lodging place. A stooped, slouching posture thus favors the contraction of that dread disease. At some period each day, preferably as a minute of rest and

relaxation between classes, at the same hour however, the teacher should stand and have all the pupils do likewise, and with head and shoulders thrown back and chest extended and mouth closed carry out a "breathing drill" by practicing "inhaling" and "exhaling" to the full capacity for ten or twelve times. Try this plan for one full year and note the result on each child.

### Care of Teeth, Eyes, Ears, and Digestion

With more than 80% of children of school age in North Carolina having decayed teeth; and with less than 5% of all school children ever giving a history of a visit to a dentist, any teacher can only be appalled at the grave necessity for imparting all available information possible concerning the care of the teeth.

The first thing a teacher should do in beginning this work is to simply organize the whole school into a "Clean Tooth Club." Designate a certain hour once a week for a toothbrush drill led by the teacher. Each child should be required to have his own toothbrush and individual drinking cup. The teacher should lead in the motions, all spending two or three minutes cleaning the teeth. The teacher should at the close of the drill hurriedly inspect each child as the line passes before "breaking ranks." The teacher also should exact a promise from each child to clean his teeth at least twice a day at home. At the same time advise against cracking nuts, biting pencils, etc., which injure teeth. Candy and sweets injure the teeth and after eating such food the teeth should be thoroughly cleaned as soon as convenient.

Advise against irregularity in meals to protect digestion. Time should be taken for each meal and food thoroughly chewed and never bolted. Good teeth, proper food, plenty of time for eating and regular visits to the toilet insure against bad digestion and many other ills. Finally, every child should be taken to a good dentist twice a year.

The pupils' eyes should be tested with the Snellen eye test types previously described in order that each child having vision below normal may be placed in the front of the school room. The same thing applies to children with even slightly defective hearing. The hearing of all the children should be tested either with a watch test or whisper. If a child fails to hear the ticking of a watch from either ear at a distance in which it may be heard by other children having normal hearing, the child should be seated up front. If a child has a discharge from either ear or any kind of a sore eye see that either the family doctor or the county physician is consulted immediately. Children should be told that it is very damaging to read or study in a dim or poor light, or at twilight. The light should be bright and be placed a little behind and shine over the left shoulder of the pupil. Never sit directly in front of a light to study. A school architect should plan the lighting of all school buildings.

Many children having defective vision and hearing upon examination are found to have bad throats; and so it is very important that all such children be treated without too much delay, by competent specialists.

### Food and Water

This subject should be taught the children in the simplest language possible. Leave off such terms as "calories," "proteids," etc. Even older



children can be easily put to sleep by filling a "lesson" with such terms, which mean nothing to the average child. It cannot be repeated too often that next to having the right kind of food properly prepared, THOROUGH chewing and plenty of time regularly each day for eating is most important. Children should never be allowed to bolt their food hurriedly under any circumstances.

What our stock raising friends are pleased to term a "balanced ration" is just as important for babies, and children, and grown people as it is for pigs. To insure good health and normal growth children should have plenty of foods such as the following: Fresh milk and butter, good whole wheat and cornbread, mixed cornbread and wheat flour muffins, toasted bread, some Irish potatoes and some sweet potatoes, plenty of beans and peas, rice, grits and oatmeal; fresh vegetables in season, such as spinach, celery, lettuce, turnips; prunes, dried apples and peaches, and raisins. Sweets, preferably in form of fruit jellies, honey or pure maple syrup or home-made cane syrup. Limited quantities of eggs, cheese, beef, fish, mutton, chicken, and lean portions of hog meat. Plenty of vegetable or various other soups with various commercial "soda crackers" (not sweet) are good. They should have an abundance of good ripe fruit in season, such as oranges, apples, strawberries. The various fruit or vegetable salads, with a minimum quantity of salad dressing is permissible. Bananas and cocoa or chocolate should be given very sparingly. Tomatoes, canned or fresh, especially when used to prepare soup are good. Pure ice cream three or four times a week in summer is permissible.

If the diet of a growing child be selected from the above list, several articles each day, thoroughly prepared and served in an appetizing manner, and the child forced to eat a sufficient quantity at regular meal times, no fear need be entertained, but what he is getting a sufficiency of "calories," "proteids," "carbo-hydrates," "vitamins" and "lime salts" necessary for full physical development. The necessity for boiling all vegetables, washing thoroughly all fruits and salads eaten, raw, and for boiling, stewing, or broiling all meats, should be made plain. No respectable family should tolerate a frying pan now-a-days except to use for poaching eggs, or broiling meats. Fried foods of no description should ever be given to children. Many people can successfully imitate their better dressed neighbors in the matter of selecting and wearing their clothes; but they cannot so imitate their good cooking because they have no opportunity to do so. Therefore, the domestic science teacher, when required to practically demonstrate her cooking ability by preparing a hot lunch for the pupils every day is by far the most important teacher in the school. For the small schools that have no such teacher the grade teachers should go just as far as time will permit in imparting information on this all important subject. The hot school lunch should become as much of a fixed institution in every school, large and small, as the noon recess.

A pure water supply means often the difference between life and death. The open well, with rope or chain, and bucket, together with the hillside spring should be altogether eliminated as a source of school water supply. In the east the driven pump well, with an overflow when possible, should be used. The Piedmont schoolhouses should be supplied with bored wells and "force" pumps. In the mountains extreme care should be taken in

selecting water supplies free from possible contamination. Individual cups of course should be provided by all school children.

A pure public water supply for towns and cities is a greater safeguard against diseases like typhoid fever than any other measure that has ever been devised.

### Alcohol and Tobacco

There has been so much agitation concerning these two narcotics, and so many volumes have been written giving advice and exhortation, even laymen writing learnedly of the therapeutic (sic) value of alcohol especially, that it is probably wise for the teacher to limit his or her teaching to a few known facts about each. Alcohol as a drug, in the opinion of a majority of the members of the North Carolina Medical Society, and forty-nine per cent of the members of the American Medical Association, a former president of the American Public Health Association, a former surgeon general of the United States navy, and many of the most eminent physicians of the world, has no therapeutic value for which some other less harmful agent may not be equally as effective. It has no food value whatever. It has caused more immediate suffering, disease, poverty, murder and more untimely deaths than any other single thing in the world. The teacher is on safe ground in advising and urging children to avoid alcohol in all its forms for internal use whether medicine "whiskey," etc. throughout life.

Tobacco is also a narcotic. Its principal constituent "nicotine" when extracted and concentrated is one of the most violent poisons in the world. There is no argument in stating that the use of tobacco in any form is harmful to children. Children that use tobacco especially to excess soon become nervous and irritable. They are unable to concentrate their minds on their studies, they become less trustworthy, unreliable, do not develop the sticking qualities that make real men and seldom ever meet with the success in life that every child with normal mind, and health and energy has a right to expect. What is more, the use of tobacco is a habit, pure and simple, it is an expensive habit and an utterly useless one. It is very reasonably argued by people who use tobacco (and it is admitted of course that a big majority of adult men are users) that it soothes their nerves and rests them. That argument need not be disputed; but neither can the fact be disputed that a boy or girl under twenty-one years of age who gets the proper amount of sleep, the necessary quantity of food of proper quality, prepared as it should be, and whose habits are regular, certainly needs no nerve sedative, and is infinitely better off without such sedative, physically, mentally and morally.

We need have no quarrel with the friends who are users of tobacco, but those very friends, if sincere, will join us in trying to get every teacher and parent to obtain a solemn promise from every child to abstain from the use of tobacco or alcohol in any form until "free and twenty-one."

### Flies, Mosquitoes, and Screens

By destroying the breeding places of flies and mosquitoes, or when destruction is impossible, reducing such places to a minimum, and by thoroughly screening all houses, which is certainly easily possible, if no other efforts at public health were made, the preventable deaths from

typhoid fever and infantile bowel diseases would be reduced by half; and the sickness and suffering and financial loss due to malaria would be decreased by at least three-fourths.

The chief element in preventing the breeding of house flies is to build stables as far from the dwelling houses as possible and then beginning in early spring keep the stables thoroughly clean and dry all summer. Clean premises and good screens mean death to flies. To prevent the menace of the malaria bearing mosquito, all residence buildings, except of course in the large cities, should be erected more than three hundred yards from the edges of ponds or shallows near rivers which cannot for any reason be drained. Then all small pools about the premises should be dried and all cans, or other containers of rain water should be kept cleaned away or cut up to prevent holding stagnant water. All grasses and weeds along the ditches or in low places in the yards or near the houses should be kept cut clean and the drains kept open so that water will quickly run off after a rain. Screens should be of good wire with a very fine mesh, and the screens should be built in the windows and should cover the entire window. The common extension screen is worthless, as both flies and mosquitoes enter at will. The screen doors should be fastened with good hinges, made to fit closely and should have strong springs to keep them closed.

### Sanitary Toilets

As a matter of common, elemental decency, every schoolhouse and every home in North Carolina not having municipal or other systems of sewerage disposal should have clean sanitary toilets, approved by the State Board of Health. There should be no false modesty and no compromise on this subject. The safety and health of all the people demand it.

### Accidents

There are a few things to do in case of accidents in the way of rendering first aid to the sufferer, that every teacher should know; and that every child should be taught at an early age. Some of the most important of these instructions may be enumerated.

1. In case of bleeding from cuts, or wounds of any character, anywhere in arms or legs, a bandage, made by using a string, cord, rope, piece of shirt or skirt, should be instantly tied around the limb above the wound and twisted taut enough to shut off the blood supply and stop the hemorrhage entirely. This should be held or left securely fastened until the doctor takes charge. In case of a wound on the body proper, a clean cloth if available should be pressed over the wound and held so as to aid in natural coagulation of the blood.

2. If an arm or leg is broken, a narrow strip of board should be immediately applied, the limb gently stretched and bandaged reasonably taut so that the patient may be moved without suffering so much pain.

3. In case of fainting, the person should be given plenty of room, the collar loosened, the body stretched horizontally and the face gently fanned.

4. One of the most important things to know is **not** to roll a drowned person on a barrel. The proper treatment while waiting for the doctor is to place the patient face downward on the ground with the arms stretched straight above the head, resting on the ground, and with face turned slightly outward so that the air will not be impeded in entering



nose and mouth. The operator should kneel astride of the patient with body over patient's hips facing the patient's head and place both hands over the lower ribs with fingers spread out away from the spine. The operator should then swing his body forward with arms straight in order to allow all the weight of the body (operator's) to rest on the patient's back; then swinging back. This move should be regularly made about fourteen times a minute, and should be kept up at least **two hours**. The effect of such pressure over the back part of the patient's chest is to force the air from the lungs and by quickly taking pressure off each motion to allow the chest to spring back in place and to expand and draw air back into them, while the operator is at work, others should stand back and the patient should be partially covered with a warm blanket, when the patient begins to breathe, the arms and legs should be rubbed toward the body. This should be done without removing the blanket. The patient will breathe poorly at first and the artificial respirations must be kept up for awhile, until he is able to be put to bed. The only medicine necessary is a cup of hot coffee; and hot water bottles and plenty of blankets should be placed about the patient as soon as he is put to bed.

5. The treatment for electrical shock is the same as for drowning, that is, artificial respiration. Of course the first thing to do is to separate the person from contact with the electric current. This should be done with a **dry** board or stick or with an ax or hatchet with a **dry** wood handle.

6. In case of poison, send for a doctor, but get patient to vomit at once; and try to find out nature of poison. Vomiting may be quickly induced by running the finger down the patient's throat, or by giving a teaspoonful of table salt in a full glass of warm water if patient is able to swallow.

7. Burning. The flame should be instantly smothered. Use blanket, coat, rug, anything to closely wrap the victim in. If a person is alone when the clothing catches fire, the most dangerous thing that he can do is to run. He should fall down and roll over and over in an effort to smother the flames. The mouth should be closed and the face protected from the flames so as not to inhale the flames, and if a blanket is wrapped around the body it should be from above downward in order to protect the face.

8. If foreign bodies get into eyes, ears, nose or throat, get to a physician as quickly as possible, without making any effort to "get it out" except in the case of choking when the victim if a child should be held with feet up and head down for a second or two at a time in an effort to dislodge the obstruction and by the aid of gravity help remove it.

It is impossible for a man to bring up his own children along the lines suggested by health propaganda unless all the children of the community are being brought up in a like manner. In other words if the children of the Smith and Jones families spend their evenings at the movies, the Brown children will be there also or old man Brown will soon be on the way to the insane asylum instead of the poor house. So, the only logical place for health to be taught, and where results may be expected is in the primary grades of all the public schools. The people who arrange the school curricula and the teachers who execute the directions are charged with a grave responsibility.

We hope, we are advised, and we believe that before long they will be measuring up fully to all requirements.

## MAKING HEALTH TEACHING ATTRACTIVE

By O. J. PETERSON, CLINTON, N. C. (For twenty-five years a successful teacher.)

I wish I were able to tell you definitely how to make health work interesting to small children, or to grown-ups, as for that matter. But since I cannot, I can only make some observations, trite enough perhaps yet pertinent.

The very fact that I am asked to suggest means of making the work interesting implies lack of interest inherent in the work. That being the case, motivation must be sought outside the exercises or practices which the teacher desires to become habitual.

Now, in such a case, other sources of motivation may be discovered. Yet these may still fail to make the exercises or the practices pleasant, or attractive. However, it is a fair presumption that the teachers requesting methods of making them "attractive" are not so much concerned about that feature as about getting the work done. The fact is, there are many necessary or important duties pertaining to school life that cannot be made pleasant, but who cares, just so long as the pupil achieves the task? The truth is, in my opinion, the thing of undertaking to make every school task pleasant, or interesting, has been overdone.

Nevertheless, motivation of some kind is necessary, and interest may be reflected upon the unpleasant task from the sources of this motivation. And, in this case, the two most apparent sources of motivation are the teacher and the pupil himself. If the child is old enough or thoughtful enough to act upon the appeal of self-interest, the desire to grow up to be a perfect physique, in full possession of its inherent physical and mental vigor, and explanation of the effects of the neglect of the health practices might induce the adoption of them. But with small children this is rather an improbable supposition, yet one that may be in a measure effective in association with other motives.

Now, as I conceive it, the other and the impelling motives lie in the personality of the teacher.

Pondering along this line after the receipt of your request, I thought of the illustration which one of the founders of Meredith College used to employ in his addresses in behalf of woman's education. In scores of places in the State, he stated that, as a backwoods boy in Pender, or then New Hanover, county, he would have walked three miles to Sunday school just to get a smile from his teacher, who happened to be my mother later, and because of which the story arose in my mind.

Feeling that here is the solution of this problem, as also the solution of so many other problems in school work, I stated the proposition to a most practical-minded lawyer of this town, and, right off the bat, he said, "I can answer Dr. Cooper's question in a word; it is the personality of the teacher."

If this is true, it can hardly be answered effectively at all for some teachers, while for others it needs no answer. Yet, if there is any one thing that the professional teacher should undertake seriously, it is that of cultivating an impelling personality, and while the handicaps in many cases are woefully great, study and work can accomplish much in this respect, as is illustrated in Davis' "Work of the Teacher."

Opening the windows, brushing the teeth, standing and sitting properly,

may possess no inherent attractions; nevertheless, there is no limit to the enthusiasm with which these practices may be cultivated in order to please an idolized teacher, especially when the child is spurred on by the incentives that the skillful teacher knows so well how to apply.

Today, in the teachers' meeting in the Clinton school, I observed a health program put on after the briefest notice by the teachers and pupils of the fourth and fifth grade, and it was not only interesting but embraced a thorough knowledge of what health teaching demands, yet that knowledge of the demands does not assure practice. The practice is to be made habitual, and the problem is particularly pertinent in the case of the primary children. It is then that motivation to undertake an unpleasant task is easiest, and the provision for health records within reach of all the teachers is so complete and so calculated to help the teacher by inspiring a rivalry, and a pride in one's achievements, that it should be possible for any primary teacher of ordinary attraction for her pupils to put on a health campaign which should win practically every child to the health program. There are certainly many sources more prolific than the writer from which any teacher may secure information as to the use of the health records and other schemes for throwing over these practices an effectual interest that will operate till the child actually comes to enjoy the effects of some of the desirable practices or to take pride in personal hygiene, when the work of the teacher is done and her task achieved.

However, so many home hindrances, or even obstacles, in numerous cases confront the child that in such cases practically nothing can overcome them except an overwhelming desire to please the teacher and to receive her commendation, and, fortunately, the child of such a home is the very one who is surest to delight in pleasing his teacher and in winning her praise.

But let me not close this letter without emphasizing the importance of this health work. A few years ago, while a guest of Dr. Irving Hardesty, of Tulane University, a North Carolinian who has won considerable renown as a biologist, even British text books being illustrated with drawings of his, the doctor, apropos of nothing, turned to the writer and said: "You and others like you are making language and mathematics matters of prime importance in the schools, when you should know that the prime essential is health." This was before the days of health programs in schools, but the more I pondered the view expressed by the distinguished biologist, the surer I was that he is correct, for what does it profit a man if he gain a knowledge of all Latin and Greek, of mathematics and applied science, and lose his health? To be personal, I am confident that the removal of my adenoids in my childhood would have been worth ten thousand dollars to me; but no one seemed to know in those days, after all not so far removed, that there was any "such an animal." Moreover, as physicians have lived to see that the things they did not know were the most essential to know, so should every teacher come to see that the things too little emphasized or not even recognized in their student days may be by far the most essential thing of their manifold task.

"There is that maketh himself rich, yet hath nothing: there is that maketh himself poor, yet hath great riches."—*Proverbs 13-7.*



# THE SCHOOL NURSE: HER DUTIES AND RESPONSIBILITIES

By TALIAFERRO CLARK, Surgeon, U. S. P. H. S.

The greatly specialized nursing service of the present time did not suddenly spring into existence, but has been of more or less gradual evolution. At no time throughout recorded history has the condition of the poor and helpless sick failed in appeal to the mercy and sympathy of special groups of individuals. The ancient Egyptians were not unmindful of the humanitarian duty to help them. Long before the Christian Era the priests of Israel enjoined their charges "to visit the sick, in order to show sympathy, to cheer, aid and relieve them in their suffering."

With the passing of the old order and the dawning of the new, this work was largely carried on by conventual orders. By the establishment of a training school for nurses in London in 1840, and the founding of the first district nursing association by William Rathbone in 1859, the nursing movement received a distinct impetus, which has expanded to include the many forms of nursing service of the present day and generation.

## The Beginning of School Health Supervision

Since it is impracticable to disassociate the school from the home in successful school health work, so, likewise, is it futile to attempt school medical service without considering the school nurse. To France belongs the honor of first beginning school health supervision, when in 1837, this duty was imposed on the school authorities by Royal ordinance.

The first attempt at school health supervision in this country was made in Boston, Mass., in 1894, when school medical inspection was started for the control of communicable diseases. However, it was not until some years later that school nursing became a recognized institution in both this country and England.

## The General Qualifications of the School Nurse

It has been said that poets are born not made. So it is with the most successful school nurse. Unless she has the back ground of a sound heredity, is tactful and of equable temperament, is herself in good health and is imbued with a love and understanding of children, her work will be more difficult and less fruitful of results than otherwise would be the case.

**Training**—In addition to her regular training school and hospital work, it is preferable that the school nurse shall have had public health nursing experience and some practical instruction in the essentials of nutrition and in the sanitary requirements of school buildings and grounds. In the present stage of development, or lack of development of school hygiene in different states and communities the school nurse should have a back ground of training and experience, which at first sight would seem not properly required of her. In any case, whether circumstances require of her the discharge of certain duties more properly the task of a school physician or not, the school nurse with such training and experience is the best possible aid to the school physician.

## Proportion of Pupils to Each School Nurse

In general, school nurses should be assigned in the proportion of one nurse to each 1,000 to 2,000 school children, varying with the density of population, the average number of children to the family, the size of the school district, and accessibility of the homes from the standpoint of distances to be traveled in proceeding from home to home in follow-up work.

In rural districts the proportion of children to a nurse is usually much larger than is the case in cities, due to the difficulty of securing adequate funds. This is unfortunate, because, owing to the long distance a nurse is required to travel in visiting rural homes, fewer children can be looked after in a given time and large numbers of children who, as a rule, are without special health supervision, are perforce denied these privileges.

Finally, in a school health supervision system which includes special school clinics, additional nurses should be provided in the proportion of one nurse for each operator.

**Combined School and Routine Health Work**—In communities where the school nursing service is under the direction of the health authorities the school nurse can be utilized with profit for combined school and health department work. In such case nurses should be assigned in proportion of one nurse to 500 school children.

Unification of the duties of the school and public health nursing service in one system will be more economical and produce more satisfactory results than is possible from the present usual practice. In many communities, it is not uncommon for a single home to be visited in turn by a contagious disease nurse, a nurse of the district nursing association, a tuberculosis nurse, a nutrition worker, and by representatives of a number of social agencies, greatly to the annoyance of the householder. In the vast majority of rural districts, it will not be possible properly to cover the whole field of school nursing service, except by such combination, due to the nearly universal lack of funds to carry out comprehensive and useful programs separately.

**Supervising Nurses**—Where three or more school nurses are employed, one of them should be designated as supervisor and held responsible for the proper conduct of the work. In large school systems, assistants to the supervising nurse should be employed in the proportion of approximately one assistant to every ten nurses.

**Duties of the Supervising Nurse**—The supervising nurse is expected to plan and supervise the work of the school nurses. She should advise with the school medical and teaching staffs, and systematize the school nursing service so as to obtain the best results from the work. She should be held responsible for the satisfactory discharge of their duties by individual workers, and be required to instruct them individually and collectively in routine school nursing, and in the more specialized clinic and health education work.

## DUTIES OF A SCHOOL NURSE

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The duties that may be expected of a school nurse will vary according to whether no school physician is employed, a physician is employed on full-time or part-time basis, and whether her work is in a rural or urban school.

### A. When a Full-Time Physician is Employed

In schools where a physician is employed on full-time basis the nurse's work should supplement that of the school physician and correlate with it. The school nurse should be directly responsible to the school physician for the proper discharge of her duties which may be for routine or special work.

1. **Routine Duties**—In any circumstance there are certain duties required of school nurses in general irrespective of the type of school or character of the medical assistance. Briefly these are as follows:

- (a) Daily inspection, instruction and disposition, usually in the morning in a room set aside for the purpose, of children referred by the school physician of members of the teaching staff, who are sick with some communicable disease, suffering from parasitic skin infections, or in need of attention in case of accidents or emergency.
- (b) Routine classroom inspection at frequent intervals for the purpose of detecting unreported or unnoticed cases of communicable disease, noting the hygienic conditions of the class rooms including cleanliness, the seating of children, the temperature, the quality of ventilation, and the regulation of illumination from the standpoint of visual comfort.
- (c) Health instruction to pupils.
- (d) Health instruction to teachers.
- (e) Follow up work.
- (f) Observation of the sanitary condition of the buildings and grounds.

#### 2. **Special Duties:**

- (a) Physical inspection.
- (b) Special classes.
- (c) Open-air schools.
- (d) School clinics.

### B. When a Part-Time Physician is Employed

In schools having a volunteer medical service or service of a school physician on part-time basis, in addition to the routine duties outlined, the nurse may properly engage in special work under the physician's direction with special attention to preliminary physical inspection for detecting the more obvious physical defects and referring handicapped children to the school physician for confirmation of the diagnosis and advice regarding the treatment needed.

## RURAL SCHOOL NURSING

Rural school nursing is quite a different proposition from that of nursing in urban schools and is surrounded by many difficulties. Of these may be mentioned the lack of nursing supervision, skilled medical assistance, and of hospital and clinical facilities. Furthermore, at the present time, by reason of the nation-wide interest in child health work, the demand for school nurses in rural districts is greater than the supply, and a number of earnest workers are attempting school nursing with but limited training and experience in this special field.



In a number of rural districts not only will she be required to perform all of the general duties prescribed for a nurse of a school system having a full-time or part-time physician, but in many instances she will be called upon to act as a representative of the state health officer in so far as her work relates to the control of communicable diseases in the school and to give instruction to posture and nutrition classes, and in health education.

### A. General Consideration

1. **Contacts**—On first taking charge of the work in a given county or district, the nurse should:

- (a) Make contacts with the county and local health officers, if there are such, to secure their cooperation and arrange for the correlation of the school health work with the other health activities in the district.
- (b) Familiarize herself with the state laws and local ordinances relating to the control of communicable diseases and the medical inspection of schools and be governed accordingly.
- (c) Establish a friendly and confidential understanding with the local physicians and other influential citizens, business clubs, women's clubs, and representatives of the welfare agencies working in the district.

A community-wide sentiment in favor of school health supervision is necessary for permanent good. As the work expands volunteer assistance will be needed in the solution of problems that can not be financed by the constituted authorities or by one individual or agency alone.

2. **Preliminary Survey**—A rapid survey of each school in the district should be made, to note their number and location, the facilities for carrying on the nursing work, the enrollment and average daily attendance, the hours for opening and closing for the day, the number and arrangement of the classes, the teaching methods and the cooperation that may be expected of the teaching staff.

3. **Schedule of Visits**—In order to accomplish the most work with the expenditure of a given amount of effort in a prescribed period of time, the school nurse must systematize her work as greatly as possible. She should prepare a schedule of visits to the several schools under her charge, so that teachers, pupils and parents always may know in advance the day and the hour the nurse will arrive at a given school for weighing and measuring, for physical inspection, for special class work, for health instruction for conference with parents, or for other purposes.

4. **Hours on Duty**—In general, the hour of opening school should find the nurse at her post of duty prepared for the work of the day. No hard and fast rules can be laid down regarding the number of hours she should remain on duty. These must be determined by local conditions and by the necessities of different situations. The conscientious school nurse is more apt than otherwise to work too many hours each day. The duties of a rural school nurse are arduous and she should be careful to maintain uniform working schedule for each day in order to conserve her strength, otherwise, the work will suffer in the end.

## B. Routine Work

As a rule the morning hours of each school day should be devoted to routine work, and the afternoons and Saturdays to special classes, health instruction and follow up work. However, if the attendance is small and the routine work in a given school does not require all of the nurse's time, special work should be arranged for the morning hours as well, and the whole of the afternoon given to outside work.

1. **Classroom Inspection**—Immediately following the opening exercises the nurse should make a routine inspection of each class room to discover incipient cases of communicable diseases, unrecognized cases of communicable diseases, undetected hampering defects, to note hygienic conditions, and to advise with teachers regarding conditions in need of immediate attention.

2. **Special Inspection**—On completion of the classroom inspection, the nurse should repair to a room reserved for the purpose for a more thorough inspection of children:

- (a) Referred by the principal or teacher.
- (b) New entrants.
- (c) Returning after an absence of two or more days.
- (d) Referred for special attention at classroom inspection.
- (e) Consultation with parents.

3. **Physical Inspection**—It is an unfortunate circumstance that makes it necessary for a school nurse to examine for physical defects. As a rule the school nurse should not be required to make such inspection, because, strictly speaking, the detection and correction of physical defects should be considered a side issue in school health work, and prevention the main object in view. The preventive side of school medical inspection requires greater technical training than that of the average nurse. Moreover, her other duties are sufficient to occupy all of her time and have, in addition, greater value from the standpoint of health, protection and promotion. However, for a long time to come physical inspections must be made by school nurses or by teachers, in the majority of the rural districts, if they are to be made at all.

It is desirable that the inspection for the detection of physical defects should be made as near the beginning of the school year as possible, on a day or days designated for the purpose. The teaching staff should assist in this inspection. The parents should be notified in advance of the impending inspection, invited to be present, and their consent obtained to making the examination.

When it is impracticable to secure the consent or cooperation of the school authorities in setting aside a special day for inspection purposes, the nurse should inspect as many children as possible on her regular visiting day to the schools, beginning with the primary grades.

(a.) **Defects**—The special conditions which should be looked for and recorded during physical inspections are as follows:

- (1) Defective vision.
- (2) Defective hearing.
- (3) Defective teeth.

- (4) Defective nasal breathing (mouth breathing).
- (5) Enlarged lymph glands (specify).
- (6) Enlarged tonsils.
- (7) Deformities.
- (8) Undernourishment.
- (9) Suspected tuberculosis (chronic cough, underweight, pallor).
- (10) Nervousness.

Hearing should be recorded in the term of tenths of the normal distance at which the ticking of a watch or whispered speech may be heard. The watch used for this purpose should first be tested to determine the distance at which it can be heard by one with normal hearing. For example: If this distance should be 30 inches, it would be recorded as 10/10. If a child could hear the watch at a distance of 15 inches only, namely, 15/30, this would be recorded as 5/10. Each ear should be tested separately, the nurse standing behind the pupil who should keep one ear covered with the hand and the eyes closed during the test. Do not introduce a finger into the ear canal to prevent hearing.

Vision should be recorded in tenths of the normal distance (Lowell chart is well adapted) in the case of each eye separately, first, without glasses in case glasses are used, and then with glasses. Lack of vision in either eye is recorded as 0/10.

Vision charts should be placed in such position as to receive illumination from one side, and never in such position that obliges the child to face a window while reading the chart. Visual tests should not be made on dark, cloudy days.

Under this heading should be recorded all deformities, especially of the spine, all paralytic conditions, missing fingers, arm or leg, or any other defects not already recorded.

In examining the teeth and tonsils wooden tongue depressors should be used for each child. After using it should be broken and placed in a proper receptacle and burned at the end of the day's inspection.

On completion of the inspection the parents should be notified in the case of children suffering from physical defects requiring attention, using a form similar to the following:

A recent physical inspection of \_\_\_\_\_  
indicates the following abnormal conditions:

-----  
You are advised to take \_\_\_\_\_ to your family physician, dentist, oculist, or to a dispensary, for advice and treatment.

(Signed) -----

The notification should be followed by personal visits, especially when the results of notification are negative.

(b.) **Inspection for Contagious Diseases.**—Due attention should be paid to



the presence of contagious diseases and to parasitic skin infections while making physical inspections. However, the main reliance for the detection and control of these diseases in the school population must be placed on their discovery by routine and special inspections and exclusion during the period of incipency.

1. **Exclusion.**—Children found presenting symptoms of the following contagious diseases should be excluded from school:

- (a) Chicken pox.
- (b) Diphtheria.
- (c) Measles.
- (d) Mumps.
- (e) Scarlet fever.
- (f) Small pox.
- (g) Open tuberculosis.
- (h) Whooping cough.

Children found suffering from the following conditions should be referred to the family for treatment:

- (a) Acute eye infections.
- (b) Ringworm.
- (c) Scabies (itch).
- (d) Impetigo contagiosa.
- (e) Favus.

In all cases of suspected diphtheria the nurse should secure a culture and forward it to the health authorities giving the name, age and address of the child, and the name of the school.

In handling cases of contagious diseases the nurse should be guided by the rules and regulations of the State and local boards of health.

2. **Re-admission.**—A child excluded from school on account of a quarantinable disease should not be readmitted to the school except on written statement of the health officer to the effect that he or she is no longer suffering from the disease in communicable form.

In communities where there is no health officer the child should not be readmitted to the school except on a similar written statement by the family physician, and examination by the school physician, if there is one or by the school nurse.

4. **Weighing and Measuring.**—Every child attending school should be weighed and measured at least twice during the school year, preferably at the time of the general inspection at the beginning of the school year, and again during the last month of the school year. Children found underweight, according to available standards, should be weighed at least once a month in order to determine whether improvement is taking place following advice.

Children should be weighed and measured without shoes and without extra clothing. In the case of boys the coat and vest should be removed before weighing.

5. **Nutrition Classes.**—Children found underweight should be organized into nutrition classes for special instruction. The best results in nutrition work will be obtained if the mothers attend the nutrition classes to receive instruction in the causes and cure of undernourishment and give firsthand

information of conditions in the home which act as contributing causes to the child's defective nourishment.

a. **Causes.**—The following are some of the causes of undernourishment:

- (1) Insufficient food.
- (2) Improper food.
- (3) Irregular meals.
- (4) Bad eating habits (insufficient chewing).
- (5) Use of tea and coffee instead of milk.
- (6) Insufficient sleep.
- (7) Constipation.
- (8) Over excitement (motion pictures and evening entertainment).
- (9) Endemic diseases, such as hookworm and malaria.
- (10) Physical defects, such as decayed teeth, diseased tonsils and adenoids.
- (11) Too much school work.
- (12) Overwork before and after school hours.
- (13) Disturbance of endocrine system.

In conducting nutrition classes the nurse should give instruction with regard to the foods best adapted to promote the growth and development of children and why. In prescribing diets mothers should not be instructed in terms of calory requirements, because the average mother will not readily understand and follow instructions given in such terms. The use of milk should be insisted upon, but not to the exclusion or limitation of other desirable food substances.

The results of the most scientifically prescribed diet will be destroyed without the correction of hampering physical defects, and of faulty conditions in the home, such as poor supervision, overwork, insufficient sleep, improper table habits, unhomelike atmosphere, insanitary home environment.

A child 10% underweight according to standard should be classified as undernourished in the sense it indicates that the child should receive a very thorough physical examination by a competent physician to determine the underlying physical cause, if any, responsible for his condition.

b. **School Lunch.**—An important and often overlooked feature of school nutrition work is the school lunch. Where it is impossible or impracticable to serve hot lunches in the school, the nurse should instruct the children and their parents in the preparation of a desirable school lunch. Too frequently the lunch of the school child consists largely of pie, cake and other non-essential and indigestible food substances.

6. **Posture Classes.**—In schools without physical training courses, the school nurse can with advantage hold posture classes for children of weakened musculature with tendency to spinal curvature or other deformity. Such classes should be composed of children discovered on inspection who hold themselves in bad position, who have marked round shoulders or lateral curvature of the spine and other functional deformities, and children referred by the teacher who habitually assume a sprawling attitude while seated in the classroom and who appear easily fatigued.

7. **Follow Up.**—In a recent study of sickness and school absences among

school children by the U. S. Public Health Service, it is shown in the case of 6,099 school children with 666,449 possible number of days of school attendance for one year, that 5.6% or 37,321 days were lost on account of sickness, and 3.0% or 19,993 days were lost on account of other causes. These figures are cited to show the relatively great importance of follow up work as compared with the other duties of a school nurse. Not only is it possible for the nurse by instruction in personal and home hygiene, care of the sick, and in the care and preparation of food, to shorten the duration of the absence from sickness in individual instances, but also reduce the number of cases of sickness arising during the year and the number of absences from causes other than sickness.

Follow up work is required for:

- (a) Explaining the nature of notified physical and mental handicaps; the effect thereof on the child's health, school progress, and economic efficiency, and the proper remedy.
- (b) Explaining the nature of the quarantinable diseases and the necessity and importance of the strict observance of quarantine for the protection of the community and of other members of the family.
- (c) Inquiring into the presence of open tuberculosis in the home in the case of children suspected of tuberculosis.
- (d) Inquiring into absences of more than two days duration from unexplained causes.
- (e) Securing the cooperation of the parents in health instruction and to enforce in the home the regimen prescribed for children in special classes and schools.
- (f) Distributing pertinent health literature prepared or approved by the State and local health departments.
- (g) Securing the cooperation of the parents in practicing in the home the principles of health protection and promotion taught by health instruction in the regular and special classes and special schools.

8. Health Instruction.—To be effective, health instruction should be made a part of the school curriculum. However, in the absence of such an arrangement the school nurse should interest the teacher in giving health instruction, help her to select suitable subjects and to secure reliable health education material.

The nurse should realize that, in the majority of instances the teacher herself is in need of health instruction. For this reason, she should take advantage of teachers' institutes and arrange special occasions for the health instruction of the teachers in her district. The nurse should also impress the teacher with the importance of her own personal appearance and conduct, and the effect thereof on the health habits of her pupils. She should tactfully advise regarding the health value of a neat personal appearance and the strict observance of personal hygiene in the formation of proper health habits by her charges.

Fundamentally, health instruction of children consists largely in the cultivation of good health habits, instruction regarding the underlying principles of health promoting measures and the causes and control of communicable diseases, and in creating a sense of responsibility to the community, not only from the standpoint of the observance of the principles of



personal hygiene individually but also from that of supporting measures for maintaining the community health.

Health instruction of children should comprise:

a. **Giving Health Talks.**—The nurse should take advantage of the opportunity of contact with individual children in routine school work to impart individualized instruction. At the beginning of the school year she should confer with the school principal and teachers in regard to health talks. These should vary with the grade visited. Some of the subjects that may be covered are as follows:

- (1) Fresh Air. Both night and day.
- (2) Proper amount of rest and sleep.
- (3) Food values, emphasizing of too much tea and coffee.
- (4) Mastication of food.
- (5) Correct posture and deep breathing.
- (6) Care of the body, special care of the hair, nails, teeth and skin.
- (7) Prevention of colds.
- (8) Proper use of the handkerchief.
- (9) Proper clothing.
- (10) The communicable diseases, and how they are spread.
- (11) Disinfection.
- (12) Tonsils and adenoids.
- (13) Tuberculosis.
- (14) Vaccination.
- (15) Quarantine.
- (16) General hygiene.

b. **Cultivating Health Habits through:**

- (1) Toothbrush drills.
- (2) The use of handkerchief.
- (3) Washing the hands, and baths.
- (4) Attention to the bowels.
- (5) Maintaining correct posture.
- (6) Securing sufficient rest and sleep.

c. **Organization of School Health Clubs.**

d. **Preparing posters, compositions, and other health education material by the children.**

e. **Cooperating with the parents by:**

- (1) Consultation at school.
- (2) Visits to the home.

9. **Observation of the Sanitary Condition of School Buildings and Grounds.**—It is desirable that the rural school nurse shall have had some previous instruction in the sanitary requirements of school buildings and school grounds, because in schools where no physician is employed she can accomplish a very great good by giving advice to school principals and school boards regarding insanitary conditions in the school environment which should be corrected.

Due attention should be paid to the proximity of nuisances which may be abated, the protection of the water supply from surface drainage, the location of privies in respect of drainage planes to avoid pollution of the water supply, the use of the common drinking cup and the substitution of

bubbling fountains therefor, the facilities for washing the hands, the provision of cloak and lunch rooms and their cleanliness, the condition of the heating plant and the efficiency of the ventilation system, the tinting of the classroom walls and the seating of children from the standpoint of maximum illumination with the least visual discomfort, and the condition of the school grounds from the standpoint of adequate play space, drainage and walks.

10. **Records.**—The nurse should keep accurate records of her work which at all times should be available for the information of the health and educational authorities. Special forms should be used for recording the results of inspection, for recording follow up work, for use in connection with the control of communicable diseases, and special forms as the necessity of them arises by reason of local conditions or requirements.

### JUSTICE TO THE CHILD

The New York Tribune recently quoted Governor Miller's message to the Legislature of that State, with the editorial comment that "one of the most significant sections of Governor Miller's message is that dealing with child welfare." The editor goes on to say that "it is significant because it reflects a keenly aroused and broader sense of public responsibility; the spirit behind the desire to protect and care for handicapped children has many applications." The governor says: "I deplore paternalistic tendencies which substitute dependence upon the State for the self-dependence and self-reliance of the citizen." Yet in the case of children the governor asserts that there is a notable exception, and says in his message that "It is one of the highest functions of the State to safeguard childhood and protect the public health, and the proper discharge of that function is not paternalistic." The governor concludes by declaring that "No child in the State of New York should be handicapped by a remediable physical defect."

The Tribune concludes its editorial with the statement that "We are getting ahead encouragingly in such matters, in which a policy of broad humanity is also the best policy from the viewpoint of social economy and State building."

We are indeed "getting ahead" when the Governor of New York State comes out in plain language and assumes a position as sound as this; and when the editor of a paper of the association and history of the New York Tribune sees fit to offer its editorial commendation. North Carolina may continue near the foot of the class in its standing with reference to illiteracy; but she must never be found derelict in her duty to the physically handicapped child. If she ever does may the State Board of Health suffer the consequences.

# THE CHILDREN'S CRUSADE FOR HEALTH

By CHARLES M. DeFOREST, Crusade Executive, New York.

The Modern Health Crusade, the practice method of teaching health habits to children, owes its invention to a city father's conviction that his son needed the moral and physical discipline that the farmer chores had given him. The National Tuberculosis Association, the sponsor of the movement, had been calling children to a special short time Crusade to promote public health by selling Christmas Seals. Its management liked the idea of the health chores so well that it decided to conduct a year-round Crusade. School authorities and teachers of hygiene were called in as counsellors. In the four years that have passed since the health chores were printed, more than 25,000,000 chore records have been put to use, schools in every state have introduced the Crusade into their programs, and a quarter of the states have adopted the Crusade on a state wide basis as a curriculum activity.

The phenomenon of all this choring, which has been voluntary for most of the 6,000,000 chorers, is explained by the charm of a new kind of chivalry, open to all boys and girls over five years of age, the Modern Health Crusade. The children have flocked to its standard in order to become knights of health, and for the successive honors of squire, knight and knight banneret, and have performed vertiable ordeals,—the chores,—five weeks running, for each title.

From the standpoint of members, the Crusade may be considered an organization, national, and now international, but amorphous. No school adopting the Crusade system assumes organization obligations. Its squires and knights are banded in a common task with millions of other children, in a movement not requiring officers or privates. The Crusade manual for teachers gives instructions for the formation of health clubs for such schools as wish thus to intensify other work in practicalized hygiene; but the Crusade clubs are purely optional. In basic analysis the Crusade is a system of teaching health. It differs from the usual system in that it is founded on practice and not on precept.

Practically all courses in physiology and hygiene have been founded on the assumption that if you teach the truth of health and disease, the method of building up strength and preventing sickness, your pupils will be properly armed against disease. The assumption is in accord with the Gospel adage, "The truth shall make you free," but the unwritten condition, "Yes, if you act on it," is lost sight of. The Old Testament dictum, "They hear thy words but do them not," must not be overlooked.

Health is not so much a matter of extensive knowledge of facts as of will to comply with a few simple laws from day to day until compliance becomes habitual. The Crusade system supplies the will by interesting the children. Every child likes to play. Every child wants to grow. He likes to come up to a record. He likes to play that he is grown, and to do something worthy of a grown-up person. Competition and imitation actuate him. He likes to possess badges of accomplishment and position. He loves romance. Another principle underlying the Crusade applies to everybody: A visible daily reminder is a great help for the repetition necessary for habit.

To assure habits there must be a follow-up to the first action. A central fact of the Modern Health Crusade is the follow-up. It secures repetition



in the performance of hygienic duties day after day for fifteen weeks, often for thirty weeks, during the school year, and in many schools the work is repeated year after year. The chore records are now published in primary, intermediate, and senior editions and in another year, distinct editions for at least five grades will be published. (The list of "health chores" of the intermediate edition appears at the end of this article).

For schools that give special attention to the building up of the undernourished children, the Crusade nutrition course is recommended. For this course, the National Tuberculosis Association urges close medical supervision. A medical examination is required for all children taking it, and in all Crusade teachings, periodic medical examinations are advocated.

The performance of chores is indicated by checking in the space for each day. These "tallies" must be certified to by the child and one of his parents, and approved by his teachers. This arrangement brings about two collateral advantages: It links the home to the school and furnishes a valuable ethical drill. In many instances on record, parents have first learned some practical point on hygiene through a child Crusader in their home. A business man in Anderson, Indiana, testifies that the Crusade cured him of dyspepsia through opening his eyes to the importance of drinking water. The system of recording chores puts the child on his honor day after day to choose between right and wrong, in statements, the course by which every positive virtue is acquired. The follow-up of his statements through the observation of parents and teachers serves to keep temptations from being too strong and to check dishonesty.

The results of the Modern Health Crusade are what one might expect from a practice of these chores. They are the physical and moral improvement of the child and the prevention of disease. The following quotations are from letters written by school superintendents, state and city and rural:

"The whole work of the Crusade is practical and wholesome and no child participating can help being benefited."

"The movement rapidly gained the support of the teaching force and the grade officials, all of whom endorsed it in very positive terms as productive of marked good."

"The teachers in charge are all delighted with the work and do not hesitate to say that colds and usual epidemics are lacking where the health chores have been kept up."

"After a few weeks of the Crusade, I regard the results as superior to a year of physiology as ordinarily taught."

(From a superintendent who was skeptical). "I presented the matter at the teachers' meeting in a half-hearted way. It was presented to the pupils the next day. Imagine my surprise when I reached home to find my own children as enthusiastic as they had ever been over Christmas! Mothers stopped me on the street to thank me for making it so easy for them to keep their children clean and for leading them to form good habits that had seemed impossible before."

One of the factors in the rapid incorporation of the Crusade in the schools has been its low cost. A child may be given a thirty week course in actual practice in the Crusade at a cost of from 4¼ cents to 10¼ cents. Crusade supplies are sold on a cost basis. In every state there is an anti-

tuberculosis association or public health association from which Crusade supplies can be obtained. The names and addresses of these associations can be gotten from the office of the National Tuberculosis Association at 370 Seventh Avenue, New York City. In a number of states, school boards provide Crusade supplies free in like manner as geographies and spellers. In other states children purchase their Crusade material as they do their pencils and pads, unless the anti-tuberculosis association, the Junior Red Cross, or other philanthropic organizations donate them.

List of "health chores" of intermediate edition

1. I washed my hands before each meal today.
2. I washed my face, ears and neck, and I cleaned my fingernails.
3. I kept fingers, pencils and everything likely to be unclean or injurious out of my mouth and nose.
4. I brushed my teeth thoroughly after breakfast and after the evening meal.
5. I took ten or more slow, deep breaths of fresh air. I protected others if I spit, coughed or sneezed.
6. I played outdoors or with windows open more than thirty minutes. I tried hard to sit and stand straight.
7. I was in bed ten hours or more last night, and kept my windows open.
8. I drank four glasses of water, drinking some before each meal, and drank no tea, coffee nor any injurious drinks.
9. I tried to eat slowly, and only wholesome food including milk, vegetables, fruit. I went to toilet at regular time.
10. I tried hard to keep neat; to be cheerful, straightforward and clean-minded; and to be helpful to others.
11. I took a full bath on each day of the week that is checked (x).

*One of the ablest lawyers in North Carolina in a personal letter to the Director of the Department with reference to his own child makes the following specific and pertinent comments which every parent would be wise to heed.*

"I only regret that we delayed having the operation performed as long as we did, she being nine years old at the time of the operation. I am satisfied that if we had had her operated on at six she would already have recovered a normal arch in her mouth because the forced mouth breathing seemed to have a tendency to retard the development and spread of upper jaw. I am satisfied now that we will be required to have some expert dentist brace her mouth in such way as to spread the arch.

"If I had one word to say to parents who have children suffering with enlarged tonsils and adenoids it would be not to delay, but perform the operation as soon as the trouble gives the child the least inconvenience in breathing."

## RESPONSIBILITY OF THE DENTAL PROFESSION TO THE PUBLIC

By G. W. HOLLIDAY, D.D.S., Professor of Prosthetic Dentistry,  
Medical College of Virginia.

The position a dentist holds in relation to the public is a peculiar one. It is similar to that of the physician and surgeon. The latter are bound by medical ethics to allow the ravages of diseases to run fatal courses unless their professional services are sought. It is the same with the dentist. There is a great gulf fixed between him and those who do not desire his services, whether this lack of desire is due to indifference or ignorance of dental diseases.

In this particular the dentist is not held directly responsible, and I am truly thankful that he is not, for his responsibility is great enough as it is.

The dental profession today has greater opportunity than it has ever had before. And opportunities do not come single handed. They are always accompanied by responsibilities. Never before has the public fallen so humbly at the feet of the dentist and sought advice and treatment. They are doing this because they are better informed on the results of dental neglect. All right. Now what can the profession do by way of educating the public further to their needs of dentistry? And what is its duty in this particular? The least it could do is to speak favorably of the efforts that are being made by the STATE BOARD OF HEALTH along this line. It is gratifying to know that the various dental organizations are heartily endorsing this work and that there are very few individuals who cannot see the great significance of it. But merely endorsing this work is not sufficient. The dental profession should line up with this educational movement in the most active way possible until a far-reaching program is launched that will affect every individual in the land. Just as the "Three R's" have been carried into every nook and corner and brightened the dark places, so ought dentistry be taught broadcast throughout the land till everybody knows how to care for his teeth. It is estimated that 80% of the public are ignorant of the great importance of dentistry. The American people are too sensible not to take advantage of a good thing. The only reason they do not take better care of their teeth is because they do not know. The Dental Welfare Foundation claims that good teeth prolongs one's life ten years. It is not unreasonable to think that bad teeth have been, in an indirect way, responsible for many deaths in the early teens. Who knows more than the dentist about the needs of dentistry? Then who should take the initiative in launching a dental educational program? Today the door stands wide ajar to those who are public spirited enough to introduce a reasonable program.

Another splendid opportunity the profession has now is to line up with the efforts of the Dental Welfare Foundation. Possibly more good in the immediate present can be done by lending its entire support to this movement than in any other way.

Regardless of any and all educational programs, the most effective education is that accomplished in the private office of the dentist. Here the teacher and the pupil come face to face with the profound problems. The teacher is the most efficient kind and the pupil in the best position to learn. A more ideal condition could not be desired to give instructions. Think of an eight-year-old boy who has been noted for his alert mind, ac-



tivity in games, bravery, ruddy complexion and gentle disposition; but now is stupid, inactive, anaemic, and indifferent to everything and everybody. His mother carries him to the dentist because his teeth are literally running him crazy. There he acts the part of a perfect coward. He is afraid of the dentist, afraid of the chair, and afraid of every instrument, even the mouth mirror. (If this mirror were a little larger he would certainly see a sight to frighten him). After much coaxing, he finally sits down and opens his mouth, but very reluctantly. The dentist looks in. He sees enough to talk about for an hour, but of course no busy dentist can spend so much time talking. However, he should certainly take enough time to point out the mistakes that lead to such ills, then charge her for this time and information, for this certainly is worth as much to her as the operation is to the boy, especially if it prevents a recurrence of these ills in her family.

His entire lecture should be directed to the mother. (Of course the boy's ears are open). The first impulse is to censure her, but that would be a mistake, for her grief already is enough. This is the crucial moment for teaching a lesson. He should point out to her all the results of abscessed teeth that are present in this boy, and all the others that might follow, whether they be physical, mental, or moral. After thoroughly impressing the dangers upon her, he should then go into detail and tell her how they can easily be prevented. This is information for which she should be glad to pay.

Here is another point that should be strongly emphasized. The permanent teeth are largely dependent upon the temporary teeth for their position and arrangement in the arch. If the temporary teeth are prematurely lost the bony arch does not grow and develop sufficiently to accommodate the permanent teeth in their normal position, which, of course, means impaired function.

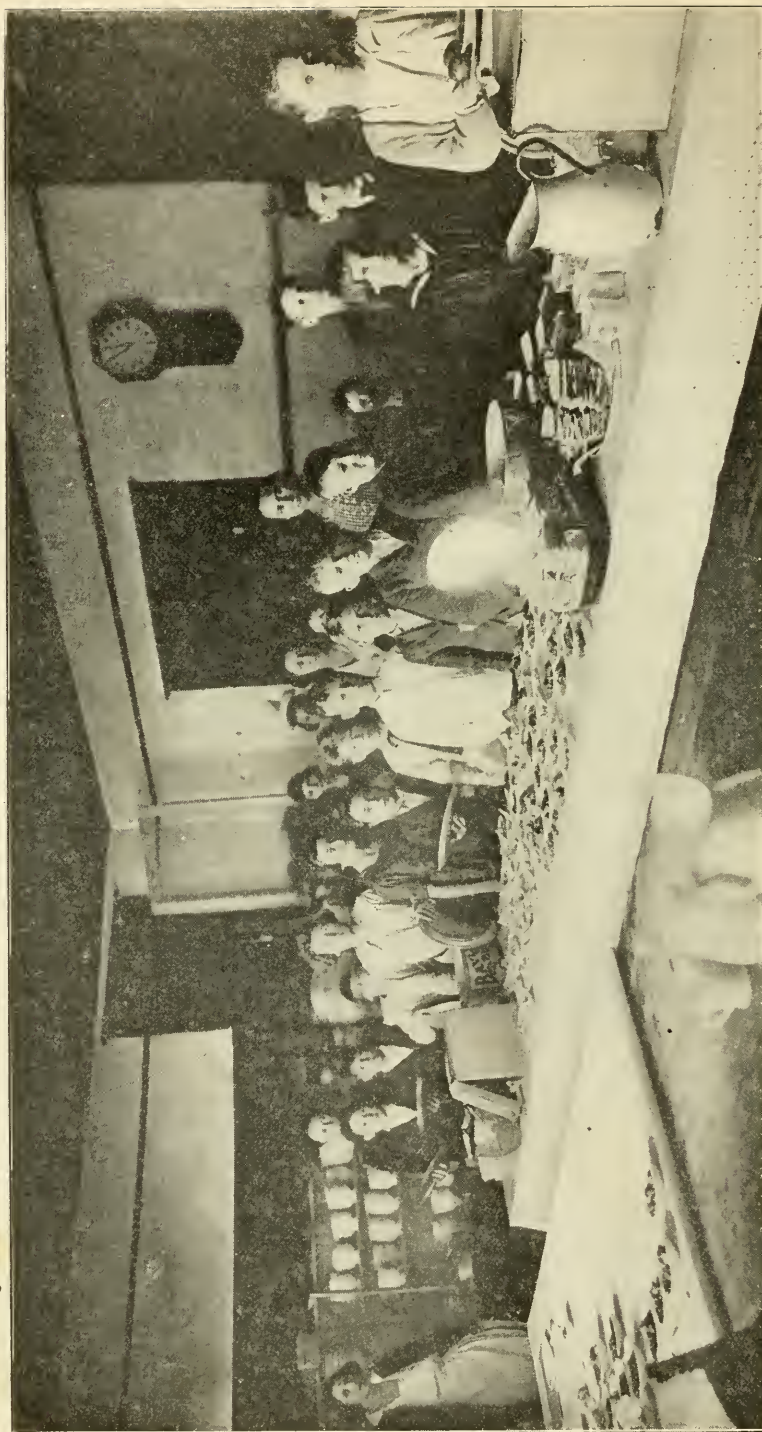
With what precaution should the dentist proceed with this boy? Suppose the little fellow has never been in a dental office before. Certainly the first impression should be the least disagreeable possible. It would be better not to do anything than to make a bad impression on him.

This leads to another obligation the dentist owes to the public. He should keep abreast of the times, learn and put into practice the new discoveries that are scientific in principle. The leading men in the profession today would consider it a crime to take the little boy mentioned above by force and extract his sore abscessed teeth without some form of effective anesthesia.

The practice on the part of the profession of minimizing the importance of the temporary teeth is rapidly being abandoned, and the dentist who continues to inform his patients that it not worth while to save them should arouse from his lethargy, shake off the shackles of ignorance, and do things in the light of the new born day.

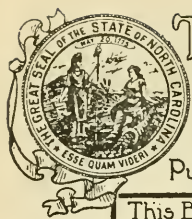
If children from two years up received proper dental care, 50% of the diseases of childhood could be eliminated. With 80% of North Carolina children's mouths in a filthy condition, with several teeth in each of these mouths acting as ideal incubators for the growth of disease germs, is it any wonder that statistics show 52% of undernourishment in these children, as against only 15% undernourishment in children with good teeth.—*R. M. Squires, D.D.S.*

A man who leads a life of tranquility and reflection, who is not disturbed at home and meddles not with the affairs of the world, may keep his mind at ease and his thoughts in one even course. But such a man has not been tried. All his ethical philosophy and his passive virtue might turn out to be idle words if he were once exposed to the rude realities of human existence. Fine thoughts and moral dissertations from men who have not worked and suffered may be read, but they will be forgotten. No religion, no ethical philosophy is worth anything if the teacher has not lived the "life of an apostle," and been ready to die "the death of a martyr."—*Philosophy of Marcus Aurelius.*



Hot school luncheon being served at the Burlington Public Schools. The picture needs no description. A majority of the pupils patronize the "cafeteria," as they call it. They not only have school officials interested in the health of the pupils; but they employ a school nurse in order to put their pretensions into practice. Burlington claims a larger enrollment of pupils in the high school according to population than any city or town in North Carolina. A plain case of effort producing results.





# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request.

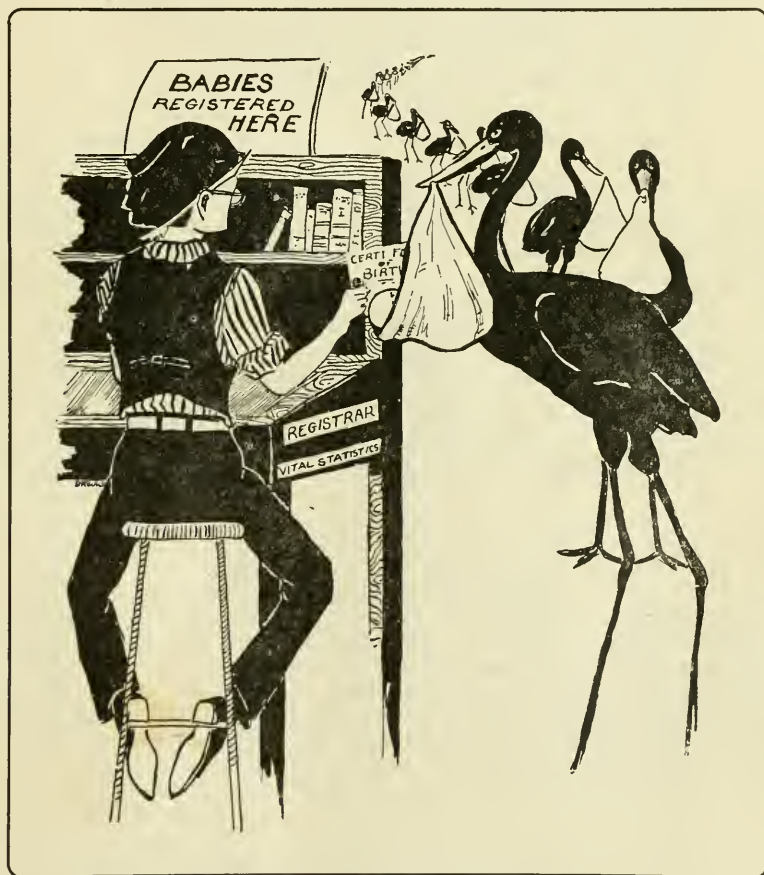
Entered as second-class matter at Postoffice at Raleigh, N. C., under Act of July 16, 1894.

Published monthly at the office of the Secretary of the Board, Raleigh, N. C.

Vol. XXXVII **MAR 12 1923**

MAY, 1922

No. 5



## IS YOUR BABY REGISTERED?

In 1921 more than 87,000 babies were registered in North Carolina by the vital statistics division of the State Board of Health. A birth certificate may prove of the utmost importance in later life. Be sure that your baby is promptly and properly registered.

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 K. P. B. BONNER, M.D., Chief of Bureau of Maternity and Infancy.

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 INFANTILE PARALYSIS  
 CARE OF THE BABY  
 FLY PLACARDS  
 TYPHOID PLACARDS  
 TUBERCULOSIS PLACARDS

CLEAN-UP PLACARDS  
 DON'T SPIT PLACARDS  
 SANITARY PRIVIES  
 WATER SUPPLIES  
 EYES  
 FLIES  
 COLDS  
 TEETH  
 CANCER  
 PRE-NATAL CARE  
 MALARIA

SMALLPOX  
 ADENOIDS  
 MEASLES  
 GERMAN MEASLES  
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The Health Bulletin is sent monthly without charge to all persons in the State who care to receive it. If you have friends or neighbors who will be interested, suggest that they write the State Board of Health, asking for The Bulletin each month. When you have finished with your copy, give it to some one else, thereby increasing its usefulness.

## A BETTER PHYSICAL BASIS FOR OUR PEOPLE: REVELATIONS OF THE DRAFT ACT AND THEIR MEANINGS

BY W. S. RANKIN, M. D., *Secretary*  
(Before the North Carolina Conference for Social Service)

THIS subject is presented for your consideration on the request of the chairman. In its treatment we will turn it around, using the last part of the subject, namely, the findings of the draft, as a background for the treatment of the first part of the subject, which relates to the possibilities of improving the physical basis of our people.

The findings of the draft, which are recorded and available for study, involves the examination of 80 per cent of the men that were examined, or a total of 2,500,000. Of this number 500,000 were examined by local boards and 2,000,000 by both local boards and examiners in the mobilization camps.

The purpose of the examination of drafted men was to find the defects which impaired the efficiency of the men as soldiers. A defect in the meaning of those in charge of the examination was considered to be any physical or mental blemish significant enough to record. Two hundred and sixty-nine defects and defective groups were recorded.

Manifestly, some of the defects recorded were of little social importance, while others were of great social importance. Misleading statements have been made and much confusion has arisen on account of the failure of people to distinguish between defects of little importance and defects of great importance. It will be well in the outset of this study to distinguish carefully between the defects of little importance and those of great importance.

Defects of little social importance are those which involve relatively small numbers of men. Now, while a defect may involve but a small number of men, 25 or 50 out of a group of from 25,000 to 50,000 men from a state, the state rate for that defect may be greater than that of any other state, and those who look superficially and hastily upon the printed tables showing the comparison of states by rates, and who fail to consider the actual number of men involved, are likely to draw misleading conclusions as to the importance of certain defects in different states. For example: Rhode Island had the highest rate for alcoholism of any state, but out of 14,000 men examined from that state there were only 22 who were defective on account of alcoholism. Delaware had the highest state rate on drug addiction, but there were only 12 men out of 4,500 men examined that were drug addicts. Connecticut had the highest state rate for diabetes, but there were but 44 cases of that disease in 32,000 men examined. North Carolina had the second highest rate of the states for neurasthenia, or nervousness, but with that high rate there were only 57 cases of the disease among 49,000 men examined. North Carolina



stood second in its rate for malnutrition, Alaska alone exceeding this State, but with the high rate there were only 37 with that defect among the 49,000 examined. One certainly would not be justified in concluding from a statistical basis so small and unstable as the example that Rhode Island is the most alcoholic of the states, that Delaware is the most doxy of the states, that Connecticut is the most diabetic, and that North Carolina is the most nervous and poorly nourished of the states. However, if one were ready to assume the worst, even so, the relative number of people involved in the diseases mentioned indicate that such diseases are, socially speaking, of little relative importance.

Defects of relatively great importance are those where large numbers are involved. The comparative rating of states with respect to these major defects, the socially important defects, has a significance entirely different from state ratings with respect to certain defects where the actual numbers involved are too small to be of any social importance.

The more important defects found under the Draft Act were: 1. Mechanical defects, forming 39 per cent of all defects. There were 300,000 cases of weak feet—that is, one-eighth of the men examined. There were 125,000 men who had deformed or injured hands and feet or limbs. There were 100,000 who had hernia, actual or potential. 2. Defects of the sense organs constituted 12 per cent of all defects. Of these about three-fourths of the defects involved the eye and about one-fourth the ear. 3. Tuberculosis and venereal diseases constituted 11 per cent of all defects, there being 75,000 cases of tuberculosis and 80,000 cases of venereal diseases. 4. Diseases of the heart and vessels constituted 10 per cent of all defects, there being 100,000 men involved in this group of diseases. 5. Development and nutritional defects constituted 20 per cent of the total defects, there being 73,000 men below military requirements as to weight. 6. Nervous and mental troubles made up 6 per cent of all defects, with a total of 40,000 men defective in this group. Other important defects which might be mentioned briefly in passing were chronic tonsillitis, affecting 64,000 men, and bad teeth, affecting 37,000 men.

We have prepared three tables which involve 15 or 16 defects and defective groups, and which include 90 per cent of the defects found in the draft. We may, without much loss forget the other 10 per cent distributed under various morbid headings, and concern ourselves with the defects shown in the tables.

The tables show a comparison of North Carolina with the United States and with nine southern states whose colored population exceeds 30 per cent (to wit, Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Arkansas), as to the relative rates of those defects which are of social significance.

Table No. 1 is most comprehensive, but you will, perhaps, find Tables Nos. 2 and 3, showing respectively the comparison of North Carolina rates with the United States, and our State rate with southern rates, the more interesting.

Explanation not so much of our virtues (they are taken for granted), but for our failures are perhaps in order, and you may be interested to have a few words in explanation of those important defects where the State's rate exceeds those of the Nation, and again, of those defects where the State's rate exceeds those of southern states with large negro populations.

The State's rate of 30.47 against the National rate of 24.86 men with tuberculosis, per 1,000 men examined, is explainable on the ground that the negro population of the South, a population peculiarly susceptible to tuberculosis, places upon the South a liability to this disease which does not exist in other sections of the country. Coupled with that is the fact that North Carolina is rapidly becoming a manufacturing State, and has the largest industrial popu-

lation of the Southern States. An indoor industry imposes a liability to tuberculosis, an indoor disease, that doesn't exist among people given to an outdoor, agricultural life.

The State's rate of 69.56 against the National rate of 56.69 for men affected with venereal diseases, per 1,000 men examined, has its explanation in this State's sharing with the rest of the South the greater susceptibility of the negro to venereal diseases. And a word may be said here for the negro and high venereal disease rate. This defect is not altogether one inherent in character, but is due to a large extent to the environment in which the negro lives—the crowded home, the absence of the separation of the sexes, and the intimacy of physical contact.

The State's rate of 24.48 against the National rate of 15.08 for mental defects, per 1,000 examined, and the higher rate of the State as compared with the Nation in feeble-mindedness, deaf mutism, and epilepsy, has its explanation in the greater isolation of the rural people, the lessened mixing with other populations—a condition which predisposes to and increases, the dangers of consanguinity. These mental and nervous diseases represent hereditary weaknesses that consanguinity develops. In this connection it is interesting to know that this group of defects occurred in highest percentage among drafted men who were taken from the extreme western and eastern sections of the State, where on the one hand isolation is effected by mountains and on the other hand by water. Right here it would be unfair and unpatriotic for us to observe the evils of isolation and consanguinity without observing as a matter of State pride a possible compensating credit that goes along with the debit of consanguinity. The fact that there is a general feeling, not only in the State, but out of the State, that North Carolina produces a relatively large number of exceptionally strong individuals, probably has its explanation, also, in our isolation and consanguineous marriages. Consanguinity not only tends to develop the weaknesses of weak mates, but also to develop the strength of strong mates—an illustration of that interesting thing that we see running all through life, the close approximation of vice and virtue.

Referring to Table No. 3 and considering the State's debits, as compared with nine southern states, with a negro population in excess of 30 per cent, the following explanations will apply:

The excess in mechanical defects, weak feet including flat feet, has its explanation in the fact that weak feet result largely from wearing shoes, and especially improperly fitting shoes. Those races have strongest feet who are least accustomed to shoes, and those races weakest feet who use shoes the most. North Carolina being one of the colder of the Southern States, having the longest winter of any of the Southern States, with the exception of Virginia, probably uses more shoes than the states further south.

Our higher tuberculosis rate over the other southern states with which comparison is made, 30.47 against 24.49, is in direct conflict with the mortality statistics of the United States Government, which gives for the years 1917, 1918, and 1919, the time just before, during, and just after the draft, an average State mortality, per 100,000, of 133.6, as against an average national mortality of 140.9 and an average southern mortality of 167.2. If the fact were established, which in the conflict of expert witnesses is not established, that North Carolina has more tuberculosis than other southern states and slightly more than the country as a whole, I would explain the excess over the country as a whole as due to the greater susceptibility of the negro to tuberculosis and the excess over other southern states as due to the larger manufacturing population of the State, and the slightly colder climate of North Carolina leading to more indoor life. In connection with this last possible explanation it is interesting to note that the Virginia rate for tuber-

culosis in drafted men slightly exceeds that of North Carolina, being 32.10, as compared with 30.47, and Virginia is the only southern state that showed a higher rate for tuberculosis in drafted men than North Carolina.

The State's slight excess over other southern states in diseases of the heart is shown in the rate of 27.41 against the southern rate of 25.37. Cardiac diseases, especially in the age group 20 to 30, from which these statistics are derived, are for the most part the result of three sorts of infections: (1) infections that are associated with the contagious diseases of childhood; (2) infections that arise from focal infections, especially about the teeth and tonsils; and (3) infections associated with and a part of venereal diseases. North Carolina, on account of its rural population, has a very low contagious disease rate; the men from this State showed a better condition of their mouths than the men from the average southern state, and our venereal disease rate was much better than that of the average southern state, being 69.56 as against 116.09. We should have had less cardiac trouble than the other southern states instead of the slight excess shown in the table. The findings are contrary to what we should have expected, and I know of no explanation. A friend has suggested that the poorer condition of our pumping stations was due to the greater energy of North Carolina people and the corresponding heavier work they throw on their hearts.

The explanation for our higher rate on nervous and mental diseases over the country as a whole applies also to our excess over the other southern states with which comparison is made.

On the whole, North Carolina makes a favorable showing in the comparison of defective men with both the national and southern averages. We have a credit of 39.64 points in our comparison with the Nation as a whole in the defects shown in the tables, and a credit of 34.33 points, as compared with other southern states.

### A BETTER PHYSICAL BASIS FOR OUR PEOPLE

In considering the question of health it is necessary to know (1) the present condition of the patient as it compares with the average; and (2) the direction of the movement of the patient's vitality, whether he is better or worse than yesterday or a week ago.

The present condition of the health of this State, as compared with that of other states, and as indicated in the findings of the draft, and in the vital statistical records of the Bureau of the Census, is good. It is better than the average as indicated in the findings of the draft, which I have laid before you somewhat in detail, and it is much better than the average when judged by the mortality records of the United States Government. The birth rate and death rate in North Carolina for 1921 indicate a condition of vitality that is exceptional, as compared with the average birth rate per 1,000 in the United States. North Carolina's birth rate last year was 33.3 per 1,000. Our birth rate was higher than that of any other state, and one of the highest birth rates of any country in the world. High birth rates, which have characterized the vital statistics of this State ever since we have had a registration law (now seven years), predispose to high death rates because large infant populations furnish a group of great susceptibility to disease and of enfeebled vitality. Nevertheless, the death rate of this State has, since we knew what it was through the Vital Statistics Law, been one of the lowest in the United States, the lowest of any of the old states of the Union with high age group populations, and last year was only 11.4. We shall probably never see death rates for states go below 10 per 1,000, so that North Carolina is approaching very closely to the irreducible minimum, after which time improvement in vitality will no longer be measured by reduction in death rates but by an increase in average longevity. The present condition of our patient then is good, and compares favorably with that of the best.



Even a more encouraging aspect of the State's vitality is the direction and rate of its movement. The patient improves from day to day, and from year to year the death rates decline. The general death rate, per 1,000, during the last six years, which coincides with the collection of vital statistics, has declined from between  $1\frac{1}{4}$  to 2 points per 1,000; the typhoid death rate from 35 to 10 per 100,000; the tuberculosis has dropped from 138 to less than 100 per 100,000 of the population. The infant death rate is also tending downward, and this tendency will be accentuated with the maternity and infancy work under the Sheppard-Towner bill.

The present condition of the State's vitality, coupled with its declining death rates, is a matter of encouragement rather than one of satisfaction. That the opportunity to prolong life, to make it more efficient and happier, to bring it to a fuller and more perfect vitality, will never be lessened but continually enlarged, is readily apparent when we remember that the promotion of health, the making of the fit fitter, is a larger, more positive, and a more worth-while program than the negative phase of health work, that of preventing disease and removing defects, that of making the unfit fit.

In discussing death rates and longevity let us not get the idea that health work seeks quantity of life. Its real goal is a higher quality of being. In prehistoric times the world saw more life than exists here today. The world would not be better off but worse off, in all probability, if its population were doubled and everybody lived to be 200 years old, if there were no corresponding increase in vital efficiency, nor in achievement for the common welfare. The man who lives 40 years and accomplishes more for the common good than one who has lived a hundred years outlives the centenarian. So vital statistics dealing with quantity of life, not necessarily its quality, do not tell the whole story. Only in so far as low death rates and greater longevity indicate a higher state of being are they the sources of encouragement.

"We live in deeds, not years; in thoughts, not breaths;  
In feelings, not in figures on a dial;  
We should count time by heart-throbs. He most lives  
Who thinks most, feels the noblest, acts the best."

## PHYSICAL INDICES AS SHOWN BY DRAFT EXAMINATION

TABLE I

CONDITION	U. S.		SOUTH		N. C.	
	No.	Rate	No.	Rate	No.	Rate
Men involved in study.....	2,510,791	.....	368,357	.....	49,350	.....
Defects per 1,000 men.....	1,533,938	557	234,218	556	30,230	545
Defective men per 1,000.....	1,289,403	468	194,906	461	25,134	453
Rejections per 1,000.....	730,000	291	78,724	213	10,819	219
Mechanical defects: all forms..	593,290	215	78,053	186	10,728	193
Flat-foot .....	301,146	109.35	32,430	77.41	5,023	90.71
Hernia, actual and potential...	109,664	39.82	15,623	37.70	1,496	27.02
Underweight .....	72,972	26.50	12,178	28.72	1,435	25.91
Underheight .....	8,004	2.91	853	2.09	124	2.24
Defects and diseases of eye....	112,184	40.74	13,440	31.64	1,749	31.58
Diseased tonsils .....	63,585	23.09	10,878	25.44	1,150	20.77
Diseases of ear and deafness....	23,608	8.57	1,362	3.21	153	2.77
Tuberculosis .....	80,601	24.86	12,659	24.49	2,058	30.47
Veneral diseases .....	54,843	56.69	20,371	116.09	1,625	69.56
Organic heart disease.....	99,621	30.74	13,335	25.37	1,851	27.41
Mental diseases: all forms.....	48,888	15.08	9,708	17.79	1,654	24.48
Feeble-mindedness .....	39,095	12.06	8,369	16.28	1,459	21.60
Deaf-mutism .....	21,187	7.69	2,702	6.33	430	7.75
Epilepsy .....	14,195	5.15	2,292	5.45	365	6.59
Defective and deficient teeth....	37,301	13.54	5,155	12.27	589	10.36

TABLE II  
Comparative Rates of Nation and North Carolina

STATE CREDITS		
NAME OF DEFECT OR DISEASE	U. S.	NORTH CAROLINA
Defects per 1,000 men.....	557	545
Defective men per 1,000.....	468	453
Rejections .....	291	219
Mechanical defects: all forms.....	215	193
Flat-foot .....	109	90
Hernia, actual and potential.....	39	27
Underweight .....	26.50	25.91
Underheight .....	2.91	2.24
Defects and diseases of eye.....	40.74	31.58
Diseased tonsils .....	23.09	20.77
Diseases of ear and deafness.....	8.57	2.77
Organic heart disease.....	30.74	27.41
Defective and deficient teeth.....	13.54	10.36

STATE DEBITS		
Tuberculosis .....	24.86	30.47
Venereal diseases .....	56.69	69.56
Mental diseases: all forms.....	15.08	24.48
Feeble-mindedness .....	12.06	21.60
Deaf-mutism .....	7.69	7.75
Epilepsy .....	5.15	6.59

TABLE III  
Comparative Rates of Southern States and North Carolina

STATE CREDITS		
NAME OF DEFECT OR DISEASE	SOUTH	NORTH CAROLINA
Defects per 1,000 men.....	556	545
Defective men per 1,000.....	461	453
Hernia, actual and potential.....	39.82	27.02
Underweight .....	28.72	25.91
Defects and diseases of eye.....	31.64	31.58
Diseased tonsils .....	25.44	20.77
Diseases of ear and deafness.....	3.21	2.77
Venereal diseases .....	116.09	69.56
Defective and deficient teeth.....	12.27	10.36

STATE DEBITS		
Rejections per 1,000.....	213	219
Mechanical defects: all forms.....	186	193
Flat-foot .....	77.41	90.71
Underheight .....	2.09	2.24
Tuberculosis .....	24.49	30.47
Organic diseases of heart.....	25.37	27.41
Mental diseases: all forms.....	17.79	24.48
Feeble-mindedness .....	16.28	21.60
Deaf-mutism .....	6.33	7.75
Epilepsy .....	5.45	6.59

# ANNUAL REPORT OF THE SECRETARY OF THE NORTH CAROLINA STATE BOARD OF HEALTH

By W. S. RANKIN, M. D., *Secretary*

(Before Conjoint Session State Medical Society and State Board of Health,  
Winston-Salem)

## INTRODUCTION

THE people of North Carolina assume that the State Board of Health may make mistakes. They assume also that this Society is in a better position to recognize and correct the mistakes of the Board of Health than any other group of our citizens. They have required, therefore, that the Board report to you every year what it is doing and what it proposes to do. If the Board, because of the large scope of its activities, cannot make a complete report of work in progress and prospect, the people expect you to interrogate freely the Board on any phase of its work, and they require this Board to answer your questions without reservation or resentment. Hence, our presence.

Just now the medical profession is interested more in the tendencies of public health work than in its history or present status. The profession is interested more in direction and rate of movement than in present latitude and longitude. The Board, in this report, will attempt to indicate to you clearly what it conceives its objective to be, how that objective is related to you and how it proposes to achieve it.

## OUR OBJECTIVE

There exists a vast surplusage of untreated disease and impairment, a potential field which needs and awaits the application of medical science, and which is not less than twice as great, very probably five times as great, as the field now cared for by the medical profession. To break down the barriers of ignorance and poverty, and to assist in so organizing the forces of medicine that they may extend their services to the large surplusage of untreated disease and impairment—that is the first and present objective of public health. We little realize the size of the problem of uncared for ills until we consider the problem analytically.

In North Carolina there were 87,456 births last year. Of these births 56,782, or 64.9 per cent, were attended by physicians, and 30,674, or 35.1 per cent, were attended by midwives. Of the 56,782 mothers attended by physicians there was a large per cent who were never seen during their pregnancy, and another large per cent who received most inadequate care during their puerperal state. Add to those attended by midwives those receiving inadequate attention during pregnancy and add again those who received inadequate attention during their puerperal state, and you have a proportion of maternity receiving inadequate medical care twice, probably five times, as great as the proportion of maternity that receives adequate attention.

From maternity we pass to infancy. Now, infancy is a state of being that is normal but neither strong nor safe, as indicated by the fact that one-sixth of all deaths occur in the first year of life, and one-third of all deaths in the first five years. Infancy is such a state of being as to call for professional supervision and care both for the sick and the well; furthermore, the practice of pediatrics, as you know, is in proportion to the intelligence of the



community and the practitioners' clientele, extending its sphere of usefulness from the three to five per cent of obviously sick babies to the entire baby population. Here again, when one considers the unoccupied field of pediatrics and compares it to the amount of medical care rendered to infancy, it is clear again that the unoccupied field of medicine is from two to five times as large as that at present under cultivation.

From infancy we pass to childhood, to that age group where the communicable diseases—measles, whooping cough, scarlet fever, diphtheria, meningitis, and the early manifestations of tuberculosis—play the leading role in the tragedies of life, and, they go with the children to the schools. Here in North Carolina are 850,000 public school children, twenty per cent or 170,000 of the total number with visual defects needing correction; here are 40,000 public school children, five per cent of the group, with diseased tonsils and adenoids which ought to come out; here are 600,000 children, eighty per cent of the public school children with bad mouths, laying the foundation for subsequent digestive disturbances, rheumatism, and cardiovascular diseases. Now add up your total—the mild, apparently safe, cases of contagious diseases, particularly measles and whooping cough, that were not seen but that should have been seen by physicians, the severer cases, and the more dangerous infections that were not seen soon enough or often enough by the physician, the complications and the sequelæ, many with life-long effects that occurred because of inadequate medical service, and to this add all the physical handicaps to educational progress—and how great is the potential field of medicine as compared with its actual field of operation!

And now we pass to adolescence, to the age of puberty—that critical time in life when the sex impulse awakens, when individuality emerges, when family restrictions are strained and broken, when the individual wanders in the wilderness, when character is plastic and unsettled, when the great red plague awaits its prey. Here in North Carolina there are 50,000 new cases of gonorrhea, syphilis and chancroid each year—more venereal diseases than all other acute communicable diseases combined. Only one-sixth of these diseases are reported. Perhaps not more than one-third of the cases are seen during their early and curable stages by physicians. Taking this problem in its bulk, it does not receive one-half, perhaps one-fifth, the treatment that it needs.

And now, hurriedly, we pass on to adult life—those beyond twenty—and here rest our major proposition as to the relative sizes of the occupied and unoccupied fields of medicine on the evidence of one unimpeachable witness, to wit, the Life Extension Institute. The Life Extension Institute in the last ten years has gone into various industries, located in various sections of the country, and varying in character from universities and banks to mills and mines, and employing from a few hundred to several thousand employees, and has examined, without any selective process, all officers and employees from the president down to the humblest worker. The Institute has found fifty-nine per cent of the more than 250,000 persons examined in need of medical attention at the time of examination, and of those needing attention only one-fifth were under the care of physicians. The evidence, then, of the Institute is that the potential field of medicine among adults compares with the occupied field as four to one.

Surely the fields are white unto the harvest, but the laborers are few. And, mark you, I have so far considered only the first objective of public health. When, if that time ever arrives, we shall have provided adequately for the lame, the halt, and the blind, the diseased and impaired, then we shall be ready, retaining the work of making the unfit fit, to enter that larger and future domain of medicine where the fit shall be made fitter. I can touch here but lightly on this distant and larger objective, but already its signs are

discernible. Dentistry has become an art that concerns itself mainly with preserving the teeth and keeping them beautiful and symmetrical. Pediatrics, in many centers, already is giving more time to the well baby population than to the sick. The Life Extension Institute is blazing the trail which the profession will follow in extending their services from the incapacitated to the impaired, and from the impaired to the well. When we contemplate that time, not so far off, when our profession shall have achieved its first objective, shall have adequately provided for the diseased, and shall have begun to concentrate its thought and energies upon the new and larger field of making the strong stronger, we catch something of the feeling, something of the inspiration of St. John in Patmos: "And I saw a new heaven and a new earth: for the first heaven and the first earth were passed away; and there was no more sea. And I, John, saw the holy city, new Jerusalem, coming down from God out of heaven, prepared as a bride adorned for her husband. And I heard a great voice out of heaven, saying, Behold, the Tabernacle of God is with men, and he will dwell with them, and be their God. And God shall wipe away all tears from their eyes; and there shall be no more death, neither sorrow, nor crying, neither shall there be any more pain; for the former things are passed away. And he that sat upon the throne said, Behold, I make all things new."

### THE ONLY WAY

There is one way, one only way to the attainment of this objective of public health, and that is through a more thorough application of medical science to the physical needs of the race. This means that the use of physicians in maternity must be continuously extended until all births are attended by physicians, and every case of obstetrics has adequate medical care not only at the time of delivery but throughout pregnancy and the puerperal period; this means a more complete and prompter use of physicians in the acute illnesses of infancy, and for the well baby population, the addition to maternal care of a reasonable amount of professional oversight; this means the prompt use of physicians in all cases of acute infectious diseases not only for the treatment of the immediate disease symptom or condition, but for prescribing and encouraging such care of the child, whether its symptoms be severe or mild, as will lessen the frequency of complications and sequelæ; this means that the common defects of school children must be made uncommon defects, and the physical retardation of educational progress removed; this means that all cases of venereal diseases must be brought promptly under the care of physicians and kept there until the cases are no longer infectious and dangerous to the public; this means that seventy-five or eighty per cent of adults, who need medical supervision and treatment, must be brought under the care of the medical profession. In short, the attainment of the objective of public health, to wit, the removal of the surplusage of disease and impairment, and the promotion of the health of the average citizen, means and can mean but one thing—a tremendous enlargement of the field of medical practice.

### HOW THE FIELD OF PROFESSIONAL USEFULNESS MAY BE ENLARGED

To make the application of medical science more commensurate with public needs two conditions must be fulfilled: (1) a greater demand for medical science must be developed; and (2) the medical profession must be organized not only as at present for scientific discussions but for organized effort, real team work, in dealing with the problems of both private practice and public health.

A greater demand for medical science must be brought about through a more extensive and thorough understanding by the public of its needs and value. The larger public knowledge of medical science is to be achieved through educational work. The intelligent appreciation of health and its hazards, a more complete realization of the use of medical science in safeguarding health, in anticipating, preventing, and postponing disease and impairment is in proportion to the intelligence of a population. Intelligence uses, appreciates and pays for medical science, but ignorance neither uses, appreciates nor pays.

To do the educational work which will be necessary to make the public demand for medical science commensurate with the need there are two essential agencies: (1) the official health agency, including both central and local boards of health; and (2) the county medical society.

The State health agency and the local county health department should endeavor to reach every nook and corner of the State and county, and, in so far as they may, every citizen with information that will lead to a higher ideal of physical living, a keener appreciation of health and its hazards, and a more general use of medical science. Through bulletin, special letter, correspondence courses, general correspondence, press, and platform, the official agencies should endeavor to carry the gospel to every creature.

But official effort, no matter how vigorous, will fall far short of the needs and possibilities of making the people understand and appreciate, to the extent that they should, the value of medical science. The Methodists and Baptists of North Carolina, through their evangelists, visiting elders, itinerant representatives, and elaborate correspondence, could develop a limited understanding of the principles of their denomination, but these activities carried on from Raleigh and increased many fold over what they now are would never influence to the point of determining the conduct of the tens of thousands of people who are active in these religious organizations. We must not forget that there is a very large percentage of people who do not read, and many more who read but do not understand—a group of people who get their information only *viva voce*, and whose channels of influence are limited to personal contacts. As their spiritual salvation, so their physical salvation must be conveyed to them by their local minister, the one of the soul and the other of the body.

The local medical society is as essential and important a part of any plan of physical salvation as is the local spiritual salvation; moreover, the local medical society must learn from their spiritually minded brethren that while pastoral work, home visits and individual case work is necessary, it is not all; that work with the people collectively prepares for and makes possible the pastoral or individual case work. Organized medicine must deal collectively with the public. Unorganized medicine cannot deal with the public. Let some individual member of a county medical society try it and begin to meet the people collectively. He is misunderstood, no matter how praiseworthy his motive. He will not give many addresses before his brethren begin to whisper among themselves that he is an advertiser. The individual physician, under present conditions, is debarred from dealing with the local public in a collective way, but the organized society can do it and should do it without further delay.

Such a task for a county medical society is both practical and easy. On the one hand it places no heavy burden on the individual physician, while on the other hand it does contribute an enormous service to the public in improved efficiency and happiness, and to the profession, if not in other ways, in an increased income. It pays its way, and to my mind this aspect of the field of organized medicine is the thing that makes it practical and insures its future.



A concrete example will make some of the possibilities of organized effort clearer. Let us take a county of 500 square miles, 25 x 20 miles. The county seat is near the center of the county, and the population is approximately 30,000. There are twenty-four active practitioners in the county. Each one of these doctors agrees to speak or to read an address or a paper which the county medical society secures through himself or through some one else, and which the society has censored, approved and adopted as its own statement. Now note that the address is not that of the doctor who gives it or reads it, but is the address of the society. The physician agrees to give this address or read the paper at twelve points in the county during the year, filling one appointment during each month. A committee of the medical society working with the local Red Cross Chapter or the county welfare officer, or both, arrange for the audience. Not less than two physicians address each audience. Two physicians and two subjects draw a larger group of people than one speaker and one subject. This is a reasonable and needed public service from the individual doctor, which is made possible with the county medical society normally sensitive to public as well as private needs.

Such a program would provide twenty-four public addresses each month or 288 public addresses during the year. Such a program with an average audience of only 100 persons would reach 28,800 people or ninety-five per cent of the total population of the county during the year. Such a program would embrace such subjects as (1) Physical Condition of People Generally; (2) Importance of Periodic Physical Examinations; (3) What People Should Know About Infections; (4) Value of Vaccines and Antitoxins; (5) What People Should Know About Tuberculosis; (6) What People Should Know About Cancer; (7) Sex Hygiene (for men); (8) Venereal Diseases (for men); (9) Sex Hygiene (for women); (10) Venereal Diseases (for women); (11) Maternity; (12) Care of the Baby; (13) Surgical Conditions of the Abdomen, "Indigestion and Liver Complaint"; (14) Constipation; (15) Focal Infection; (16) Headaches; (17) Heart and Arterial Diseases; (18) Kidney Diseases; (19) Principles of Nutrition; (20) Pellagra and Diabetes; (21) Relation of Teeth to Health; (22) Relation of Nose and Throat to Health; (23) Relation of Eyes to Health; (24) The Quacks and Sects; and (25) Patent Medicines. A list of subjects like the above would include ninety per cent of the information which the public needs. Such a program within a year or so will increase twenty to forty per cent public appreciation of medical science and the use of those who dispense it. It will improve the earning capacity of the people of the county to the extent of hundreds of thousands of dollars, and will increase the income of the profession by thousands of dollars. In short, it pays both parties, the public and the profession, in terms of the higher satisfactions of life and in cold hard cash. Such a program will be more effective in one year than all the educational work of the State and local health departments in five years. Such a program affords the only way, and a very effective way, for dealing with chiropractic. "Ye shall know the truth and the truth shall make you free." But the knowledge of truth which frees from disease and quacks must come through the preacher, the preacher of physical salvation in the here and the now.

The question of supplying the medical services for the now increased demand on the part of the public presents itself. The greater demand for medical science having been brought about by more effective medical organization, the greater supply must be provided, likewise, through carefully planned organized effort. Now in dealing with this matter of greater demand for medical services it is well, for the sake of a clearer understanding, to consider it from two points of view.

First, the collective educational work of the county medical society will have created a widespread interest on the part of individuals to know themselves physically—whether or not they are suffering from some incipient disease or some physical impairment that conditions their present or future usefulness. In short, there will be a large demand for physical examinations. To answer this demand a county medical society could organize a county diagnostic clinic where either any person would be admitted unconditionally for advice, not treatment, or where persons applying for examination would be admitted conditionally, the conditions of admission being determined by the society who are operating and running the clinic. It would seem that if the demand for examination is not too great, any person, not at the time of their application for examination under the care of a physician, should be admitted for examination and advice, for, let us keep in mind the fact that the diagnostic clinic is but the extension of the collective educational work of the local society to the individual. This educational work in public meetings, and with individuals in the clinic, will inevitably uncover to the recognition of both profession and people the great surplusage of disease and the need for treatment that we dealt with in the first part of this report.

And right here, with this reference to treatment, we come to the second point of view of the public demand—namely, a demand for treatment which shall be more adequate for the existing surplusage of disease. We realize that in dealing with this question of the treatment we are touching the quick, but this phase of the problem exists, and there is no use in playing the ostrich. There is no reason why we should hesitate to approach the problem of treatment. It should be dealt with, having due regard for the interest of both the public and the profession, and it can be dealt with beyond the question of a doubt in such a manner as to advance the interest of both parties, public and profession. The character of treatment is purely a scientific problem, a problem lying entirely within the domain of the profession, but the provision for treatment is largely an economic problem that resolves itself into a matter of administration.

In attempting to handle the economic phase of the problem of treatment, we shall do well to attempt to provide for shifting ambulatory charity treatment from the shoulders of the twenty or twenty-five doctors in the average county, where it now rests heavily, to the shoulders of those who should bear it, namely, to the general public. From twenty to thirty per cent, perhaps, of practice is charity work, and charity practice is good for neither recipient nor administrator. It is a makeshift at best. Funds can be provided to maintain the clinic and the maintenance of the clinic should include, among other things, reasonable pay for the physicians in attendance—payment of physicians being made on the basis of so much per hour service rather than case treated, thereby avoiding establishing two classes of practice fees in the county.

With the educational program heretofore described, the local Red Cross Chapter, working with the local health department and the local county Welfare Officer, could bring together a group of individuals who could undertake the business problem, the financial problem of the clinic. The following sources of revenue could be considered: (1) a nominal charge for admission to the clinic; (2) Red Cross Chapter funds; (3) Christmas Seal funds; (4) contributions from individual citizens of the county; (5) appropriations by the town or city board of health; and (6) appropriations by the county commissioners. The financing of the clinic the first year would be, relatively speaking, the only difficult period for the business management. After that, when the board of directors, or business management, could account to the

people, especially through the educational channels already referred to, for the amount of money expended and the results obtained, the clinic should become a growing concern.

The next question that would have to be settled would be who should be entitled to the advantages of the clinic which has now been provided by the general public. Indiscriminate admission for treatment is out of the question—it would either destroy the efficiency of the local profession or require a budget which the people of the county could not provide. The admission to the clinic, then, would be conditioned upon the economic status of the applicant for treatment. The conditions for admission are matters for the local county medical society to work out, perhaps with the assistance of those who are interested in developing the business side of the clinic, particularly the local Red Cross Chapter.

Finally, when the people of the county have been informed, organized not temporarily by traveling evangelists from the State Board of Health, but permanently through and around their own local county society, when they have been made to see the great unsupplied need for medical services, when they have had demonstrated to them what a public clinic can do, when they come to understand that the public clinic is but the halfway station between unorganized private practice and a county hospital, when they recognize that provision must be made not only for the ambulatory cases of the clinic but for surgical emergencies and the more serious cases of illness, then through a process of education and evolution, the county public hospital will come into existence. But, remember this, if you forget everything else that has been said, that public organization to care for disease and impairment in an adequate way will follow and never precede professional organization. We shall have organization and coöperation without when we get coöperation and organization within.

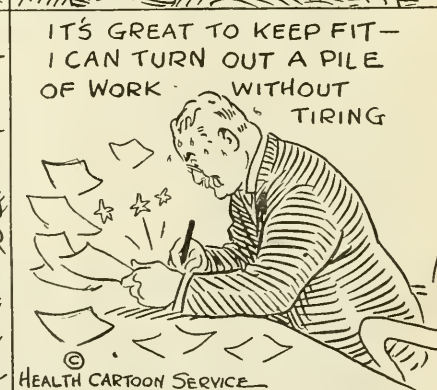
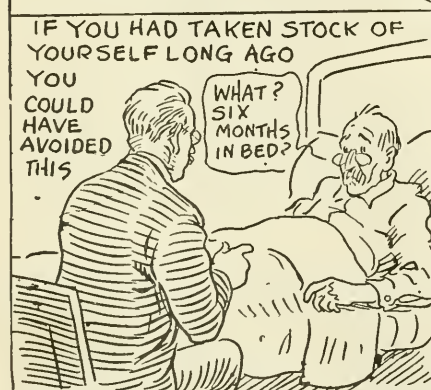
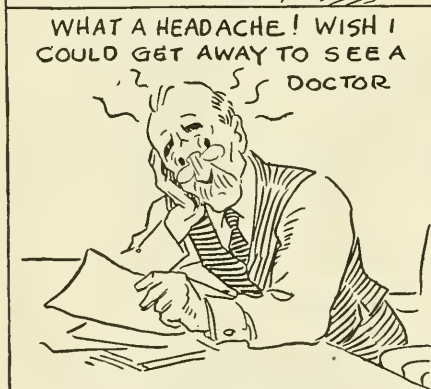
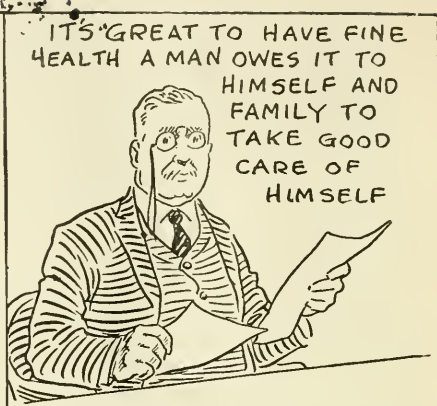
#### RESOLVED: NOT TO WORRY

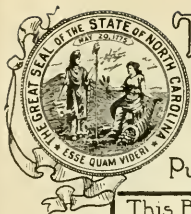
It is never too late to make a good resolution, especially when that resolution is, "Not to worry." Worry is abnormal, and is therefore injurious to health. It weakens the mental forces by tiring them out by doing nothing. It never gets anywhere. It is mental labor for nothing.

The effect of chronic worry on health is almost that of poison. It not only disturbs the mind and perverts mental vision, but it disturbs the natural functions of the body, causing indigestion, poor nutrition, and neurasthenia. It often produces a condition of the bowels that favors constipation with all of its attendant evils. It undermines health, and is at all times a great menace to both mental and physical health.

For most people, worry is largely a habit that can be avoided. Oftentimes when reason is applied to worry, worry vanishes, which is to say that there is seldom a reason for worry. Strange to say, the things that people should worry over most worry them least. However, people can, by firmly resolving not to worry, and by looking at the physical and mental results of worry, do much towards living a saner, happier, healthier life.







# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request.

Entered as second-class matter at Postoffice at Raleigh, N. C., under Act of July 16, 1894  
Published monthly at the office of the Secretary of the Board, Raleigh, N. C.

Vol. XXXVII

JUNE, 1922

No. 6

## SHAKESPEARE'S SEVEN AGES OF MAN

"Jaques: All the world's a stage,  
And all the men and women merely players;  
They have their exits and their entrances;  
And each man in his time plays many parts,  
His acts being seven ages. At first the infant,  
Mewling and puking in the nurse's arms;  
Then the whining schoolboy, with his satchel  
And shining morning face, creeping like snail  
Unwillingly to school; and then the lover,  
Sighing like furnace, with a woeful ballad  
Made to his mistress' eyebrow; then a soldier,  
Full of strange oaths and bearded like the pard,  
Jealous in honor, sudden and quick in quarrel,  
Seeking the bubble reputation  
Even in the cannon's mouth; and then the justice,  
In fair round belly with good capon lin'd,  
With eyes severe and beard of formal cut,  
Full of wise saws and modern instances;  
And so he plays his part; the sixth age shifts  
Into the lean and slipper'd pantaloon,  
With spectacles on nose and pouch on side,  
His youthful hose well sav'd, a world too wide  
For his shrunk shank; and his big manly voice,  
Turning again toward childish treble, pipes  
And whistles in his sound; last scene of all,  
That ends this strange, eventful history,  
Is second childishness and mere oblivion,  
Sans teeth, sans eyes, sans taste, sans everything."

—JAQUES in "As You Like It," Act II, Scene VII.

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### FREE HEALTH LITERATURE

The State Board of Health has available for distribution without charge special literature on the following subjects. Ask for any that you may be interested in:

WHOOPING-COUGH  
HOOKWORM DISEASE  
PUBLIC HEALTH LAWS  
TUBERCULOSIS LAWS  
TUBERCULOSIS  
SCARLET FEVER  
INFANTILE PARALYSIS  
CARE OF THE BABY  
FLY PLACARDS  
TYPHOID PLACARDS  
TUBERCULOSIS PLACARDS

CLEAN-UP PLACARDS  
DON'T SPIT PLACARDS  
SANITARY PRIVIES  
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FLIES  
COLDS  
TEETH  
CANCER  
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MALARIA

SMALLPOX  
ADENOIDS  
MEASLES  
GERMAN MEASLES  
TYPHOID FEVER  
DIPHTHERIA  
PELLAGRA  
CONSTIPATION  
INDIGESTION  
VENEREAL DISEASES  
CATARRH

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### FOR EXPECTANT MOTHERS

The Bureau of Maternity and Infancy has prepared a series of monthly letters of advice for expectant mothers. These letters have been approved by the medical profession. They explain simply the care that should be taken during pregnancy and confinement, and have proved most helpful to a large number of women. If you want them for yourself or a friend, send name to the State Board of Health, and give approximate date of expected confinement.

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### THE HEALTH BULLETIN

The Health Bulletin is sent monthly without charge to all persons in the State who care to receive it. If you have friends or neighbors who will be interested, suggest that they write the State Board of Health, asking for *The Bulletin* each month. When you have finished with your copy, give it to some one else, thereby increasing its usefulness.

# THE Health Bulletin



PUBLISHED BY THE NORTH CAROLINA STATE BOARD OF HEALTH

Vol. XXXVII

JUNE, 1922

No. 6

## BIRTH REGISTRATION A DEBT TO SOCIETY

"As soon as a new-born child enters the world, society's responsibility for his future welfare begins. To this end, all of our vast machinery for health, education, and development has been provided. Our wealth has been poured out lavishly to supply every conceivable device for promoting the welfare of the child. Every possible effort has been spent in order that he may live and develop into a better type of citizen. Through orphan aid and social insurance we have ever provided against contingencies arising through the death of parents, accident, and other hardships. Society has done its duty well, and each day sees still greater advances in providing for the welfare of the child.

"In the face of these facts, cannot the physician at least announce the arrival of the new-born child? If society has so amply provided for, and so eagerly awaited the arrival of its charge, has it not the right to be promptly notified of its arrival? Aside from the fact that the registration of its birth is the child's first birthright, is it not the physician's unalterable duty to society to promptly register all births?"

## COMMERCIAL VALUE OF VITAL STATISTICS

"The dollars and cents value of accurate knowledge of the death rate is yearly receiving greater recognition. The development of the South has been greatly retarded by the absence of re-

liable mortality statistics, based on the thorough registration of deaths.

"Honest data, fairly presented, will remove the imputation of unhealthfulness from many localities now tainted by the apprehension of insanitary conditions in the minds of possible incomers. Moreover, intelligent immigration will not go where the conditions of civilization are so slack that no regard is paid to human life, even so much as to record its beginnings and endings. A registration system is the sign of commercial progress and opportunity, and is indispensable to the removal of insanitary conditions. Better values for real estate, both farms and city homes, lower rates and the removal of discriminations in the issue of policies of life insurance in certain localities; the upbuilding of communities and the coming of greater commercial prosperity are some of the practical uses for which reliable vital statistics are needed today in many parts of the United States and most of all in the South."

## IS THE BABY WORTH REGISTERING AND NAMING? OR WHAT IS THE BABY WORTH?

We would say from a million up. Most fathers and mothers would say, "The price is far above rubies." A human life is estimated to be worth \$4,000. Under the present income tax law, both Federal and State, a baby pays dividends from the time it is born. You are allowed to deduct \$400 from your income for Federal taxation and



\$200 from your income for State taxation for each dependent child. This makes a baby worth \$600 at the time of its birth, and is worth this much yearly as long as it is dependent.

In return for this exemption in Federal and State taxation, you should treat the law and the baby fair and square. **THE VITAL STATISTICS LAW REQUIRES THE REGISTRATION OF EVERY BIRTH WITHIN FIVE DAYS**, and to be square with the baby you should see that the certificate bears the baby's name; for without the name a certificate is almost as worthless to the child as a mortgage on a horse, to the mortgagor, without a description and name of the horse.

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#### **PARENTS, TAKE NOTICE!**

Parents will receive a card from the Bureau of Vital Statistics from sixty to ninety days after the birth of their child, saying that the birth is registered with the Bureau of Vital Statistics, and if the child is not named they are requested to write name of child on card and return to the Bureau of Vital Statistics, so the name can be written on the original certificate. If after ninety days you do not receive this card of notice, be sure to write the Bureau of Vital Statistics and inquire if your baby is registered. **BE SURE TO GIVE FATHER'S NAME, BABY'S NAME, DATE, AND PLACE OF BIRTH.**

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#### **CORRECT CERTIFICATES OF DEATH**

"Lockjaw from cord infection, due to midwife infection." Contributory cause of death, "Careless, dirty handling of cord." This information is given on one of the death certificates furnished by a Louisiana physician, whose certificates are noted for accuracy. It records one of too many instances of like kind, which occur in the State of North

Carolina month after month. The remedy is apparent. **EDUCATE THE MIDWIFE.**

In this connection it is pertinent to call the attention of the physicians to the difficulty of reading their names on many of the certificates sent in. One's own name is so familiar to one's self that naturally it seems to the writer as if any one could read it without any trouble, but those who record the certificates find the greatest difficulty, and have to use lists of physicians and other records in order to "run down" the name. This makes the certificate useless, or almost so, unless the information can be obtained.

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#### **REGISTRATION OF BIRTHS AND DEATHS**

Closely allied to the reporting of contagious diseases (morbidity statistics), and the prevention of the spread of these diseases, is the registration of deaths (mortality statistics), and of births. Vital statistics is the book-keeping of all health work. It should be of great concern to the teacher to see that all children in the school district have their births registered, especially those attending the schools. Dr. Cressy L. Wilbur says, "Vital Statistics is the Cinderella of modern public hygiene. She sits in the chimney corner and sifts the ashes of dusty figures, while her proud sisters, bacteriology and preventive medicine, go to the ball and talk of the wonderful things they have done. But the prince's slipper fits no other foot, and when we ascend to facts and not to mere empty bombast, vital statistics, and accurate vital statistics, are our sole dependence. The chief thing in the development of vital statistics is to conserve life and health, and secondly, to furnish legal records of the greatest value. The State wants facts—knowledge as to wastes in infant life, in early life from preventable in-

fection, and in middle age from degenerative diseases. A complete system of vital statistics alone affords us the means of learning accurately the extent of such waste, the definite location and causes, so that we may apply suitable remedies."

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### DISTRIBUTION OF DISEASES

Karl Pearson says, "There are five groups of diseases, those of infancy, childhood, youth, middle age, and old age."

Of course one may die of an old-age disease at thirty, or have a child's disease at fifty, but in the main we have diseases more or less according to age groups. It is known now that the longer diseases of infancy and childhood are deferred, the less serious do those diseases become and the better able are we to overcome the disease as we grow older.

We know now that it is **CRIMINAL** to expose children to catching diseases with premeditation. Murder in the first degree.

The work of health departments and physicians is to eliminate disease and to improve the quality of living and defer death until the very latest period possible. Nowhere can be found a better description of human life and the pitfall of disease and accidents that beset us from infancy to old age than is found in Addison's "Vision of Mirza."

"The bridge thou seest, said he, is **HUMAN LIFE**; consider it attentively. Upon a more leisurely survey of it, I found that it consisted of three score and ten entire arches, with several broken arches, which, added to those that were entire, made up the number about an hundred. As I was counting the arches, the Genius told me that this bridge consisted at first of a thousand arches: but that a great flood swept away the rest, and left the bridge in

the ruinous condition I now beheld it. But tell me further, said he, what thou discoverest on it. I see multitudes of people passing over it, said I, and a black cloud hanging on each end of it. As I looked more attentively, I saw several of the passengers dropping through the bridge into the great tide that flowed beneath it: and upon further examination perceived that there were innumerable trap-doors that lay concealed in the bridge which the passengers no sooner trod upon, but they fell through them into the tide, and immediately disappeared. These hidden pitfalls were set very thick at the entrance of the bridge, so that throngs of people no sooner break through the cloud, but many of them fell into them. They grew thinner towards the middle, but multiplied and laid closer together towards the end of the arches that were entire. There were, indeed, persons, but their number was very small, that continued a kind of hobbling march of the broken arches, but fell through one after another, being quite tired and spent with so long a walk."

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### OH! NORTH CAROLINIAN, DID IT EVER OCCUR TO YOU?

That the average density of population in North Carolina is fifty people to the square mile.

That deaths from typhoid fever were reduced in 1921 while in sister states the rate of typhoid climbed.

That the State is spending fifty millions in two years on public highways besides what the counties are expending for the same purpose.

That we ship out of North Carolina carloads of fruits and vegetables, apples, peaches, dewberries, grapes, watermelons, cantaloupes, potatoes, and peanuts.

That our waters are filled with fish and our mountains with valuable ore.

That we have enough water power, if developed, to run all trains, factories, and to light every town in the State.

That there is a fall of 7,000 feet from our mountains to the sea.

That while deaths from tuberculosis are being reduced yearly, yet we had 2,641 deaths from tuberculosis (all forms) in 1921.

That our average yearly rainfall is 50.12.

That we are second in the manufacture of cotton goods.

That we lead the world in the manufacture of tobacco.

That we have the largest pulp mill in the world.

That we are second in the manufacture of furniture.

That we have the second largest aluminum plant in the world.

That we have the largest towel plant in the world.

That the sanitary privy law was the best law ever passed by any State, from a sanitary and aesthetic aspect.

That we have the largest hosiery industry in the world.

That we have the largest denim mill in the world.

That North Carolina has the highest mountain east of the Rockies.

That more people were vaccinated against typhoid fever in 1921 than any other state.

That more children were vaccinated against diphtheria (toxin antitoxin) than any other Southern state.

That over 50 per cent of the population of the State are served by Wholesale Health Departments.

That one city in North Carolina is the largest distributing center of hydro-electric power in the world.

That North Carolina is ninety-nine and one-half (99.5) per cent native stock.

That North Carolina has the highest birth rate, 33.4, and one among the lowest death rates, 11.0, of any state in the Union.

## BIRTH RATE AND DEATH RATE

What do we mean by birth rate or death rate? We mean the number of births or deaths per thousand population. For example, we take the number of births reported from a county, multiply this number by 1,000, and divide by the population of the county. This gives the birth rate for the county. For death rate we take the number of deaths reported by the county, multiply by 1,000, and divide by population of the county. This gives the death rate. The actual number of deaths occurring in a county may be large, while the rate is low on account of the large population.

When we wish to find the rate for a particular disease we multiply the number of deaths occurring from this particular disease by 100,000, divide this by the population. This gives us the rate per 100,000 population.

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## EXPLANATION OF PLATES

PLATE No. I shows graphically the number of births attended by physicians, viz., 56,782, or 64.9 per cent and number of births attended by midwives, 30,674, or 35.1 per cent.

PLATE No. II shows graphically the number of stillbirths attended by physicians, 2,645, or 67.1 per cent, and number of stillbirths attended by midwives, 1,225, or 39.9 per cent.

PLATE No. III shows graphically the white stillbirths, 2,051, or 54 per cent of all stillbirths and number colored stillbirths, 1,829, or 46 per cent of all stillbirths. It also shows that of illegitimate stillbirths, 65 were white, 322 were colored.

PLATE No. IV graphically shows there were 60,529 white births, or 69.2 per cent, 26,411 colored births, or 30.2 per cent, and 516 Indian, or .6 of one per cent. There were 927 white illegitimate births, or 1.5 per cent of all white

births, and 3,403 colored illegitimate births, or 12.8 per cent of all colored births.

PLATE No. V graphically shows that 19,404 colored births were attended by midwives, or 73.5 per cent of all colored births, and that 7,007 colored births were attended by physicians, or 26.5 per cent of all colored births.

PLATE No. VI graphically shows that 49,775 white births were attended by physicians, or 82.2 per cent, and that 10,754 were attended by widwives, or 17.8 per cent:

PLATE No. VII graphically shows the comparison in the number of white, colored, and Indian births, 60,529, 26,411, and 516 respectively. It shows also the white birth rate, 32.9; colored birth rate, 34.5; and Indian birth rate, 33.4; the county having the highest rate: Mitchell, 41.7; and the county having the lowest rate—23.3.

PLATE No. VIII graphically shows fifty-one counties with a birth rate of 30 to 35:

1. Alamance	24. Harnett
2. Anson	25. Henderson
3. Ashe	26. Hertford
4. Avery	27. Hyde
5. Bertie	28. Iredell
6. Bladen	29. Jones
7. Cabarrus	30. Lee
8. Carteret	31. Lenoir
9. Caswell	32. Lincoln
10. Catawba	33. Macon
11. Cherokee	34. McDowell
12. Chowan	35. Montgomery
13. Clay	36. Orange
14. Cleveland	37. Pamlico
15. Cumberland	38. Pasquotank
16. Dare	39. Pender
17. Davie	40. Randolph
18. Duplin	41. Richmond
19. Forsyth	42. Robeson
20. Gaston	43. Rockingham
21. Gates	44. Rowan
22. Graham	45. Stanly
23. Guilford	46. Stokes

47. Union	50. Yadkin
48. Wake	51. Yancey
49. Wayne	

Twenty-seven counties with a birth rate of 35 to 40:

1. Alexander	15. Onslow
2. Brunswick	16. Person
3. Columbus	17. Pitt
4. Davidson	18. Rutherford
5. Edgecombe	19. Sampson
6. Franklin	20. Scotland
7. Greene	21. Surry
8. Halifax	22. Swain
9. Haywood	23. Tyrrell
10. Jackson	24. Vance
11. Johnston	25. Washington
12. Madison	26. Wilkes
13. Nash	27. Wilson
14. Northampton	

Fourteen counties with a birth rate of 25 to 30:

1. Buncombe	8. Hoke
2. Burke	9. Mecklenburg
3. Chatham	10. Moore
4. Craven	11. New Hanover
5. Currituck	12. Perquimans
6. Durham	13. Polk
7. Granville	14. Transylvania

Five counties with a birth rate of over 40:

1. Caldwell	4. Warren
2. Martin	5. Watauga
3. Mitchell	

Two others with birth rate of 22.3 to 24.5:

1. Alleghany	2. Camden
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### EXPLANATION OF TABLES

TABLE No. I shows number of births and deaths in each county, together with the ratio per thousand population for year 1921.

TABLE No. II, showing total births and deaths as a comparison, together with ratio per thousand population for North Carolina—1916-1921, inclusive.



TABLE No. III, showing total number deaths from typhoid fever and tuberculosis (all forms) for years 1916-1921, inclusive; also rate per 100,000 population.

TABLE No. IV, showing deaths from tuberculosis (all forms) by counties, by race, by sex, and by month of occurrence for 1921.

TABLE No. V, showing deaths from tuberculosis (all forms) of white, Indian, and colored males engaged in certain occupation; also age distribution, for 1921.

TABLE No. VI, showing deaths from tuberculosis (all forms) of white, Indian, and colored females engaged in certain occupations; also age distribution for 1921.

TABLE No. VII shows death (exclusive of stillbirths) from certain causes by race and counties for 1921.

TABLE No. VIII shows deaths (exclusive of stillbirths) from certain causes for cities by races for 1921.

#### FOUR DIVISIONS OF STATE

For statistical purposes, and for better comparison, we have divided North Carolina into four sections, or sanitary divisions:

**Twenty Extreme Eastern Counties,** with a population of 305,033:

These twenty counties are coastal plain counties, noted for their fertile soil. These counties were formerly considered malarial counties, but in recent years there has been a tremendous decrease in malaria. This decrease was probably caused by two factors: drainage and applied knowledge of malaria prevention. These twenty counties have a large colored population, who are chiefly engaged in farming.

**Twenty Extreme Western Counties,** with a population of 341,212:

The twenty extreme western counties are mountain counties exclusively. It

will be noticed that many die from tuberculosis. This is accounted for by the large Government tubercular hospitals and private sanatoria for tuberculosis.

Leaving out these two factors, we would not have any higher rate in these counties than in the other eighty counties, and probably not as high

**Thirty Middle Eastern Counties,** with a population of 952,028, and

**Thirty Middle Western Counties,** with a population of 1,013,293:

The thirty middle eastern and the thirty middle western are for the greater part in the Piedmont section and the population is more dense than the extreme eastern or western divisions.

The tables covering each county in each of these four divisions are given on subsequent pages. Compare the number of deaths from any particular disease in your county with any other county in the same section having about the same population. Then compare your county with counties having the same population in other sections. Then compare your county and section with the State as a whole. By this means you can obtain a fairly accurate idea of the weak places in your county, if there are any, from a public health standpoint.

Almost all the deaths tabulated here could have been prevented. You may say that we cannot prevent whooping cough, but you are wrong. Whooping cough can be prevented largely by administration of fresh pertussis vaccine, and by keeping babies away from others who have the disease. The majority of deaths from whooping cough occur in children under three years of age, babies in arms for the most part.

Strict quarantine will prevent the spread of scarlet fever, measles, and whooping cough. Look at the figures of how many deaths are caused each

year by these three diseases which affect for the most part children.

Diphtheria can be prevented absolutely by using toxin antitoxin. This is made and distributed by the State Laboratory of Hygiene at the cost of ten cents for sufficient amount to give three doses, the amount required to confer immunity. SEE YOUR DOCTOR! Diphtheria can be cured, provided antitoxin be administered in time. CALL THE DOCTOR EARLY! But why wait until we have a disease when we can prevent it? Antitoxin is made by the State Laboratory of Hygiene and in any size dose costs only twenty-five cents.

Careful watch over the feeding of children and sanitation will bring down the total number of deaths from intestinal disturbances. The death rates for the particular diseases mentioned along with tuberculosis, typhoid fever, and other preventable and curable diseases, are being reduced each year, but the death rate is not dropping as swiftly as it might, and should.

Mr. Citizen: Find out the part you can play in the prevention of deaths from preventable diseases and then say, "Here am I, use me."

## THE VITAL STATISTICS LAW

For a better and more concise knowledge of the workings of the Bureau of Vital Statistics, the Vital Statistics Law, which makes it possible for the Bureau to exist, will be described in a brief way, showing the purpose of the law, the object of the law, the requirements of the law, and the provisions of the law.

### Purpose of Vital Statistics Law

To obtain statistical information necessary in forming concise estimates as to vital conditions in North Carolina, and enactment of suitable legislation, both local and general, for deal-

ing with these conditions in such a manner as to improve health and quality of living and lengthening life. The further purpose of the law is to obtain facts of great value to the individual, such as tracing ancestry, proving age, where age is in question, showing right to marry, to vote, enter school, enter military service, etc.

### Object of the Law

The object of the Vital Statistics Law is to secure a permanent record of the more important facts concerning the birth and death of every citizen of the State of North Carolina, and from these records to prepare card indices and tabular classifications in such a manner as to make readily available on inquiry the following information:

1. The total number of deaths occurring annually in the State.
2. The rate per 1,000 population.
3. Deaths from most important causes by races, ages, and by months.
4. The birth rate of the State per 1,000 population by races. Number of stillbirths, number of illegitimate births. Comparing birth and death rates so that the net gain in population can be told.

All the above information is obtainable with respect to each county, township, town, and city.

The foregoing information is absolutely necessary to understand vital conditions in the State, to know where health work is needed, against what causes of death health measures should be directed, to know if health departments are saving lives and are really a paying investment.

### Requirements of the Law

The requirements of the law as to births: Every physician, midwife, or person acting as midwife, or if there was no physician, midwife, or person acting as midwife, it shall be the duty of the father or mother of the child,

the householder, or owner of the premises where the birth occurred, or the manager or superintendent of the public or private institution where the birth occurred, each in the order named, within five days after the date of birth for which they are responsible shall file on blanks adopted by the State Board of Health full and accurate reports with the local registrar in whose district the birth occurred. Each still-birth must be reported both as a birth and death, and twins must have certificate for each twin.

The requirements of the law as to deaths: That the body of any person whose death occurs in this State, or which shall be found dead therein, shall NOT be interred, deposited in a vault or tomb, cremated, or otherwise disposed of or removed from or into any registration district, or be temporarily held pending further disposition more than seventy-two hours after death, unless a permit for a burial, removal, or other disposition thereof shall have been properly issued by the local registrar of the registration district in which the death occurred or the body was found. And no such burial or removal permit shall be issued by any registrar until a complete and satisfactory certificate of death has been filed with him.

The undertaker, or person acting as undertaker (any friend who has charge of the funeral), shall file a certificate of death with the local registrar in whose district the death occurred and obtain a burial or removal permit. The undertaker, or person acting as undertaker, shall obtain the required personal and statistical particulars from the person best qualified to supply them. The undertaker, or person acting as undertaker, shall then present the certificate to the attending physician, if any, or to the health officer, or coroner for the medical certificate of the cause of death and other particu-

lars necessary to complete the record. The undertaker, or person acting as undertaker, shall then fill out the date and place of burial over his signature and present certificate to local registrar and receive permit for burial or removal, and shall conform in all respects to the Vital Statistics Law of North Carolina.

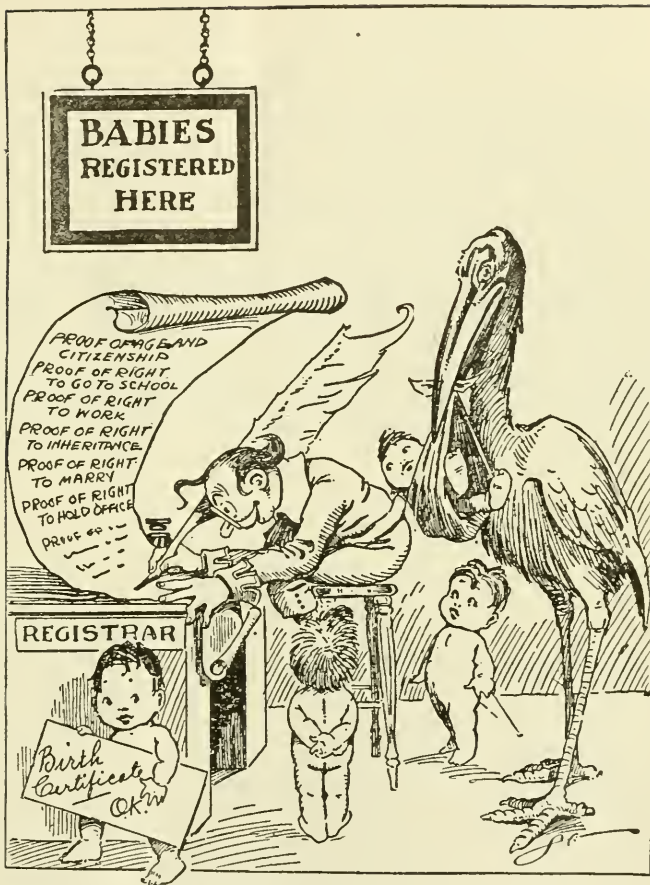
The law further requires that all casket dealers shall report to the Bureau of Vital Statistics, monthly, all sales of coffins and caskets, to whom sold, and for whom.

### Provisions of the Law

The law provides for securing of all data in regard to births and deaths in North Carolina, and provides for a central Bureau of Vital Statistics, consisting of director, whose business it is to supervise the work of the Bureau, as well as see that the Vital Statistics Law is enforced, stenographer, typists, and filing clerks. One person handling 124,000 certificates annually would have to handle 65 certificates per hour, or over one per minute, for every working hour in the year. They have to be gone through many times before they are finally placed in the vault.

The law further provides for a small fee to be paid by the counties to the local registrars for every complete certificate copied into a book to be turned in to the county register of deeds annually, and the original certificates sent in to the Bureau of Vital Statistics. Certifications are made to the county and town treasurers by the Bureau of Vital Statistics semiannually for certificates sent in by each of the 1,419 local registrars.

The law further provides that any person failing to comply with the law shall, upon conviction, be fined from \$5 to \$50, and for each subsequent offense, not less than \$10 or more than \$50, or be imprisoned in the county jail thirty days.



(COURTESY OF THE SURVEY AND THE MAINE PUBLIC HEALTH ASSOCIATION)

Notice the pleased expression on the face of the baby whose birth certificate is O. K. This means that THE BABY'S NAME IS ON THE CERTIFICATE. If you belong to the Smith or Jones or any other family, you want a permanent record of your given name. Parents who do not see that their baby's name is registered have done an unpardonable and irreparable wrong to the child.

NAME THE BABY TODAY



TABLE SHOWING TOTAL DEATHS (EXCLUSIVE OF

Race	Total	Under 1 Year	1 Year	2 Years	3 Years	4 Years	Total Under 5 Years	5 to 9 Years	10 to 14 Years	15 to 19 Years	20 to 24 Years	25 to 29 Years
White males.....	9218	2274	546	182	113	76	3191	203	153	203	286	246
White females.....	8646	1758	460	181	101	62	2562	176	116	193	328	343
Indian males.....	75	24	15	1	1	2	43	2	1	2	2	-----
Indian females.....	81	23	10	-----	2	2	37	2	2	2	1	2
Colored males.....	5406	1368	283	84	54	33	1822	130	130	217	341	256
Colored females..	5652	1134	247	84	62	34	1561	142	151	316	448	332

TABLE SHOWING DEATHS FROM TYPHOID

Race	Total	Under 1 Year	1 Year	2 Years	3 Years	4 Years	Total Under 5 Years	5 to 9 Years	10 to 14 Years	15 to 19 Years	20 to 24 Years	25 to 29 Years
White.....	155	-----	2	1	1	-----	4	9	16	22	27	13
Indian.....	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Colored.....	151	1	1	3	-----	4	9	17	18	26	21	14

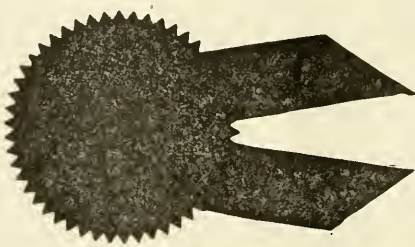
The above table shows that typhoid fever is no respecter of persons. It attacks the laughing crowing babe, the young man and maid, and those in the 'sere and yellow leaf of life.' The only reason that fewer old people have typhoid fever is because there are few old people to have it. Note that in 1921 twelve (12) died of typhoid fever after reaching the age of seventy (70).

## STILLBIRTHS) BY AGE, SEX, AND RACE, FOR 1921

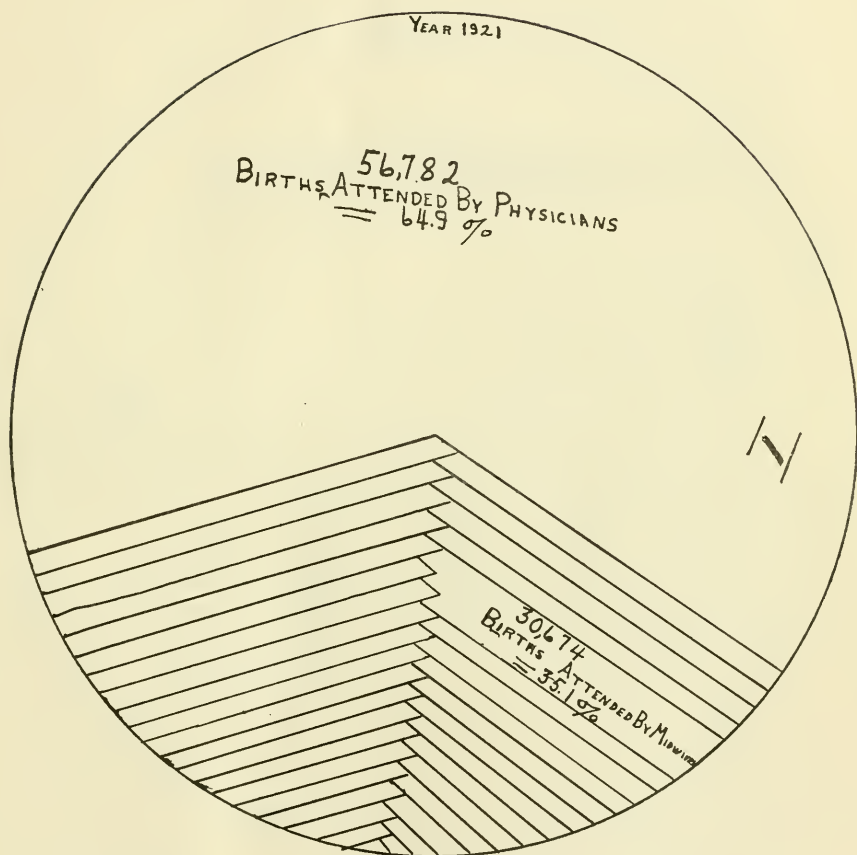
30 to 34 Years	35 to 39 Years	40 to 44 Years	45 to 49 Years	50 to 54 Years	55 to 59 Years	60 to 64 Years	65 to 69 Years	70 to 74 Years	75 to 79 Years	80 to 84 Years	85 to 89 Years	90 to 94 Years	95 to 99 Years	100 and Over	Unknown
253	237	267	295	351	373	541	702	735	555	352	170	57	16	6	26
277	361	304	253	330	296	472	572	636	580	448	227	102	24	10	36
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3	5	2	5	2	2	1	2	4	6	2	1	---	---	---	---
194	195	192	216	238	196	234	230	261	170	153	82	48	29	25	47
298	302	270	266	234	184	195	195	215	154	146	71	52	28	48	44

## FEVER BY AGE AND RACE FOR 1921

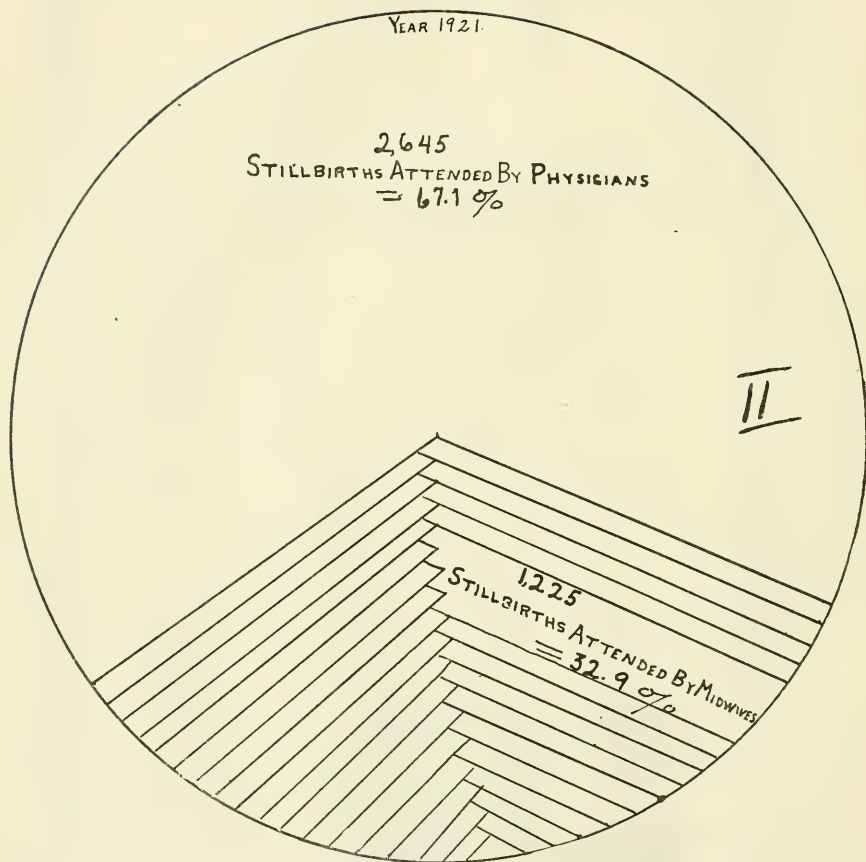
30 to 34 Years	35 to 39 Years	40 to 44 Years	45 to 49 Years	50 to 54 Years	55 to 59 Years	60 to 64 Years	65 to 69 Years	70 to 74 Years	75 to 79 Years	80 to 84 Years	85 to 89 Years	90 to 94 Years	95 to 99 Years	100 and Over	Unknown
10	9	6	10	10	1	3	3	7	3	1	---	---	---	---	1
---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	---
11	14	7	3	4	2	4	---	1	---	---	---	---	---	---	---

<p>North Carolina  <b>State Board of Health</b>          Bureau of Vital Statistics</p> <p><i>W. R. Cowlin</i>          STATE REGISTRAR</p> 	<p style="text-align: center;"><b>Certificate</b>          of Registration of Birth</p> <p><i>This is to Certify, that a Certificate of Birth has been filed with the State Board of Health, Bureau of Vital Statistics and will be carefully preserved in the official records of the State of North Carolina.</i></p> <p style="text-align: center;"><b>The Legal Record of the Birth of</b></p> <p><i>James August Gordon</i>          A child born in Town of <i>Wilmington</i>          or County of <i>Guilford</i> N. C., on the  <i>23<sup>rd</sup></i> day of <i>February</i> 18<i>97</i>, the child of  <i>James J. Gordon</i> and  <i>Elizabeth Muller</i></p> <p style="text-align: right;">MOTHER'S MAIDEN NAME  <i>F. M. Register</i>  <small>Drinking State Registered Vital Statistics</small></p>
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This certificate is 6½ x 9 inches, printed in colors, with red seal. It is furnished with certified copy of registration certificate for fifty cents.







YEAR 1921

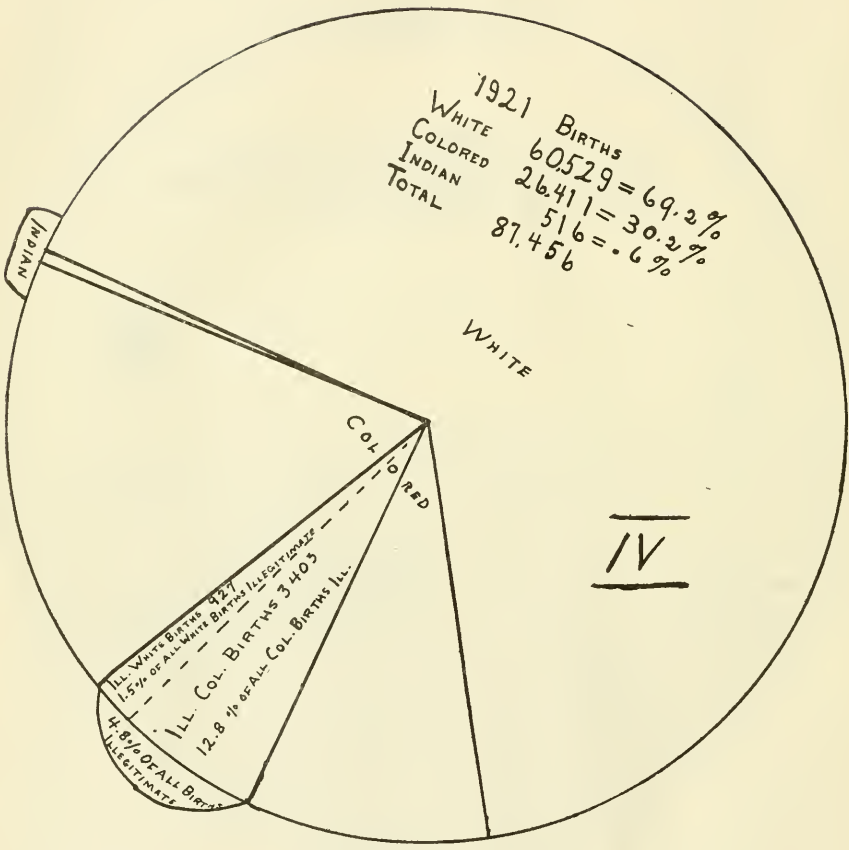
2,051

WHITE STILLBIRTHS = 54% OF ALL STILLBIRTHS  
OF THESE 65 WERE ILLEGITIMATE

III

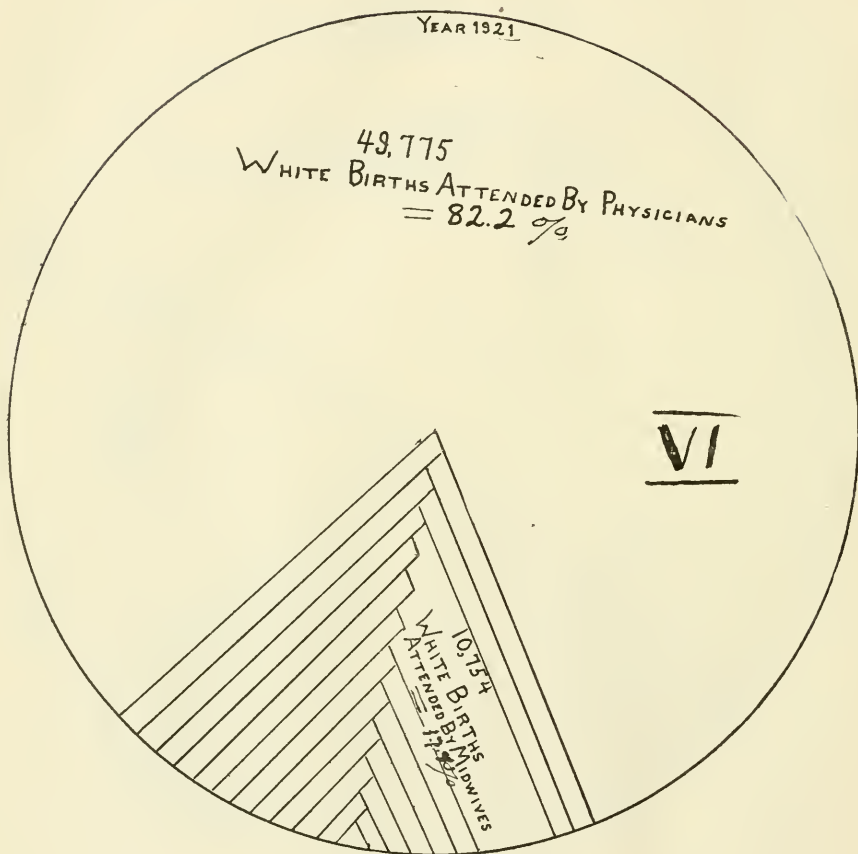
1,829

COLORED STILLBIRTHS = 46% OF  
ALL STILLBIRTHS OF THESE  
322 WERE ILLEGITIMATE







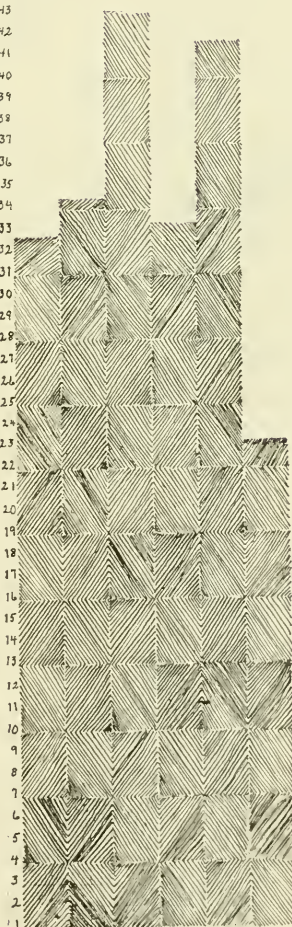


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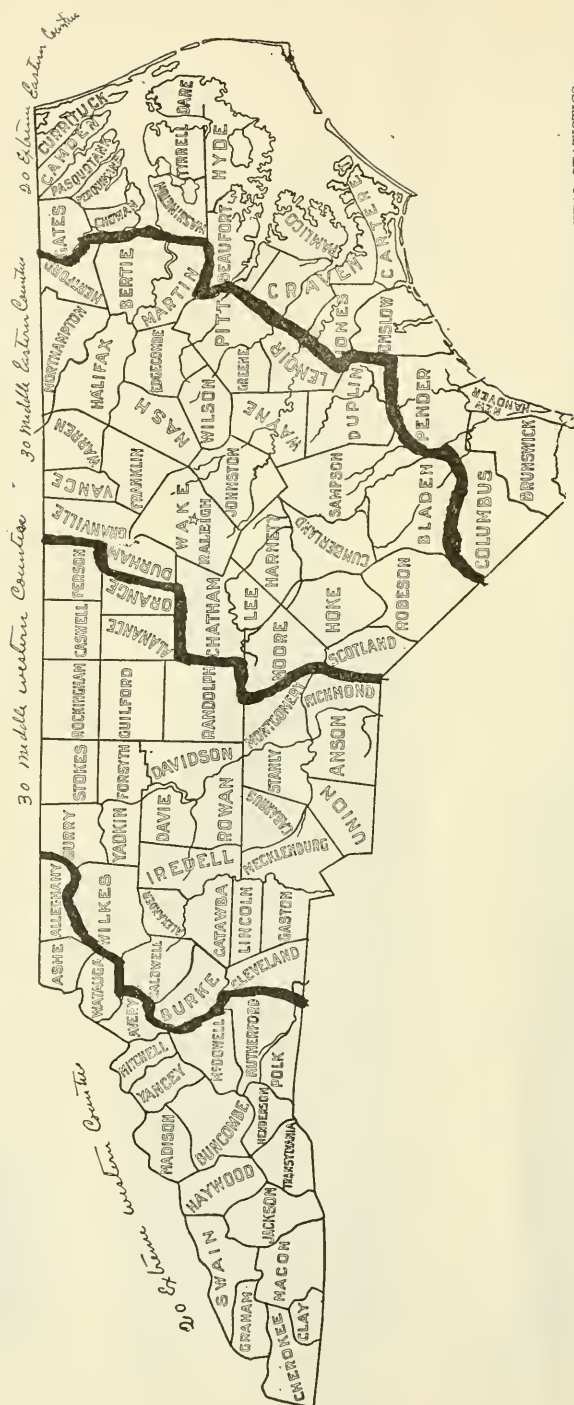


WHITE COLORED INDIAN STATE MICHIGAN (1921)  
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RATE PER 1000 POPULATION 1921 1921

VII



WHITE COLORED INDIAN  
DEATHS DEATHS DEATHS  
RATE RATE RATE  
9.6 14.3 12.7  
RATE PER 1000 POPULATION

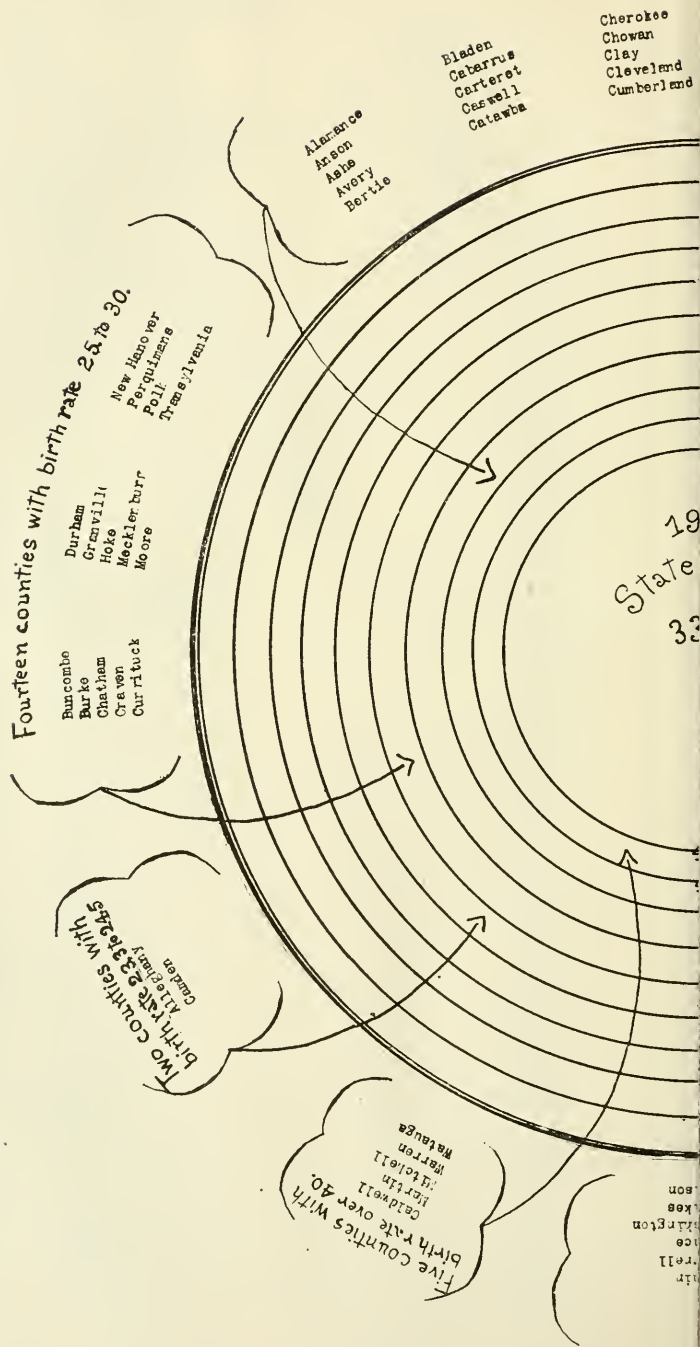


**-BUREAU OF VITAL STATISTICS  
North Carolina State Board of Health  
Raleigh**

TABLE I.—SHOWING BIRTHS AND DEATHS IN EACH COUNTY, TOGETHER WITH THE RATIO PER THOUSAND POPULATION—1921

County	Births		Deaths	
	Number	Rate	Number	Rate
Totals for State.....	87,456	33.4	29,010	11.0
Alamance.....	1,024	30.7	322	9.9
Alexander.....	441	35.8	115	9.3
Alleghany.....	173	23.3	60	8.1
Anson.....	1,000	34.7	228	7.9
Ashe.....	711	33.3	164	7.6
Avery.....	355	34.1	61	5.9
Beaufort.....	1,114	35.8	411	13.2
Bertie.....	798	33.0	285	11.8
Bladen.....	676	33.7	210	10.4
Brunswick.....	554	37.0	158	10.7
Buncombe.....	1,747	26.3	1,067	16.0
Burke.....	686	29.0	274	11.6
Cabarrus.....	1,082	31.0	352	10.0
Caldwell.....	822	41.1	177	8.8
Camden.....	132	24.5	48	8.9
Carteret.....	516	33.5	187	11.9
Caswell.....	522	32.8	154	9.6
Catawba.....	1,138	32.7	333	9.5
Chatham.....	711	29.6	216	9.0
Cherokee.....	507	32.8	136	8.0
Chowan.....	365	34.2	121	11.3
Clay.....	145	30.4	40	8.4
Cleveland.....	1,133	32.3	293	8.4
Columbus.....	1,210	39.7	356	11.6
Craven.....	823	27.8	437	14.7
Cumberland.....	1,116	31.8	489	13.9
Currituck.....	215	29.5	87	11.9
Dare.....	166	32.1	49	9.4
Davidson.....	1,287	35.6	338	9.3
Davie.....	436	32.0	138	10.1
Duplin.....	1,034	33.3	343	11.0
Durham.....	1,297	29.9	619	14.2
Edgecombe.....	1,433	36.8	482	12.0
Forsyth.....	2,459	30.0	978	11.9
Franklin.....	981	36.3	341	12.6
Gaston.....	1,860	34.8	487	9.1
Gates.....	364	34.5	85	8.0
Graham.....	152	31.0	22	4.5
Granville.....	832	26.9	239	8.8
Greene.....	607	35.2	182	10.7
Guilford.....	2,741	33.3	954	11.6
Halifax.....	1,637	36.6	490	10.9
Harnett.....	1,015	34.5	297	10.1
Haywood.....	909	38.0	201	8.4
Henderson.....	628	33.8	200	10.7
Hertford.....	583	34.5	205	12.4
Hoke.....	337	28.7	163	13.9
Hyde.....	253	30.1	57	6.7
Iredell.....	1,178	30.5	408	10.5
Jackson.....	500	37.1	114	8.4
Johnston.....	1,850	36.8	535	10.6
Jones.....	347	31.3	75	7.4





Fifty-one counties with birth rate 30 to 35

Dare  
Davie  
Duplin  
Forsyth  
Gaston

Gates  
Graham  
Guilford  
Harnett  
Henderson

Herford  
Hyde  
Irredell  
Jones  
Lee

Lenoir  
Lincoln  
Macon  
Morrow  
Montgomery

Orange  
Pauline  
Piedmont  
Randolph

Richmond  
Robeson  
Rockingham  
Rowan  
Stanly

Stokes  
Union  
Wake  
Wayne  
Yadkin  
Yancey

Alexander  
Burlington  
Columbus  
Davidson  
McKenzie

Franklin  
Greene  
Halifax  
Haywood  
Jackson

Person  
Pitt  
Rutherford  
Sampson  
Scotland  
Surry

Watauga  
Northampton  
Forsyth  
Crawford

Twenty-seven counties with birth rate 35 to 40

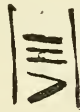


TABLE I—Continued

County	Births		Deaths	
	Number	Rate	Number	Rate
Lee.....	444	32.3	145	10.5
Lenoir.....	1,027	33.5	381	12.4
Lincoln.....	577	32.1	150	8.3
Macon.....	442	33.2	115	8.8
Madison.....	704	35.0	176	8.7
Martin.....	856	40.1	242	11.3
McDowell.....	566	32.2	153	8.8
Mecklenburg.....	2,366	28.5	976	11.7
Mitchell.....	471	41.7	102	9.0
Montgomery.....	501	34.2	94	6.4
Moore.....	622	28.1	166	7.5
Nash.....	1,611	38.0	493	11.6
New Hanover.....	1,310	26.4	737	17.5
Northampton.....	881	37.7	254	10.8
Onslow.....	563	38.0	164	11.0
Orange.....	595	32.4	204	11.1
Pamlico.....	304	33.5	84	9.2
Pasquotank.....	535	30.0	253	14.1
Pender.....	479	32.3	179	12.1
Perquimans.....	328	29.4	123	11.0
Person.....	701	36.4	273	14.2
Pitt.....	1,756	37.3	496	10.5
Polk.....	237	26.2	63	6.9
Randolph.....	1,031	33.1	315	10.1
Richmond.....	832	31.4	321	12.1
Robeson.....	1,897	34.6	614	11.2
Rockingham.....	1,530	33.7	509	11.2
Rowan.....	1,362	30.2	464	10.2
Rutherford.....	1,115	35.1	326	10.2
Sampson.....	1,383	38.1	497	13.7
Scotland.....	628	39.2	217	13.8
Stanly.....	945	33.0	197	6.8
Stokes.....	640	31.0	137	6.6
Surry.....	1,270	38.6	318	9.6
Swain.....	541	39.6	105	7.6
Transylvania.....	264	27.4	77	7.9
Tyrrell.....	186	38.3	53	10.9
Union.....	1,096	30.0	353	9.6
Vance.....	983	37.8	280	12.0
Wake.....	2,376	30.8	1,069	14.2
Warren.....	877	40.2	279	12.7
Washington.....	414	36.0	171	14.8
Watauga.....	543	40.2	120	8.9
Wayne.....	1,413	31.4	614	13.6
Wilkes.....	1,308	39.6	336	10.1
Wilson.....	1,411	37.0	572	14.9
Yadkin.....	525	31.7	147	8.8
Yancey.....	524	33.5	83	5.3

TABLE II.—SHOWING TOTAL BIRTHS AND DEATHS AS A COMPARISON, TOGETHER WITH RATIO PER THOUSAND POPULATION FOR NORTH CAROLINA FOR THE YEARS 1916-1921, INCLUSIVE

Year	Births		Deaths	
	Number	Rate	Number	Rate
1916.....	76,658	31.9	31,372	13.0
1917.....	76,539	31.8	33,989	14.1
1918.....	76,175	30.8	42,411	17.6
1919.....	69,791	29.3	30,114	12.4
1920.....	81,407	31.8	32,336	12.6
1921.....	87,456	33.4	29,010	11.0

TABLE III.—SHOWING TOTAL NUMBER OF DEATHS FROM TYPHOID FEVER AND TUBERCULOSIS (ALL FORMS) FOR YEARS 1914-1921 INCLUSIVE: ALSO RATE PER 100,000 POPULATION

Year	Typhoid Fever	Ratio Per 100,000	Tubercu- losis (All Forms)	Ratio Per 100,000
1914.....	839	35.8	3,260	139.3
1915.....	744	31.3	3,710	156.4
1916.....	700	29.1	3,517	146.3
1917.....	726	30.2	3,402	141.5
1918.....	549	22.2	3,391	137.5
1919.....	427	17.0	3,005	120.3
1920.....	329	12.8	2,931	114.5
1921.....	307	11.7	2,641	101.0



TABLE IV.—DEATHS FROM TUBERCULOSIS, FOR COUNTIES, BY RACES, SEX, AND MONTH OF OCCURRENCE

County		Total	Male	Female	January	February	March	April	May	June	July	August	September	October	November	December
Totals for State	W.	1,208	592	616	103	118	134	110	120	107	92	79	80	97	81	87
	I.	8	1	7		1			3	1	1				1	1
	C.	1,425	628	797	119	124	119	147	154	127	121	103	98	105	110	98
Alamance	W.	17	5	12	3	3	1	1		2	2		1	1	2	1
	C.	14	6	8		1	1	2		2	1	2	1	2	2	
Alexander	W.	4	3	1		1			2			1				
	C.	3	1	2		1					1					1
Alleghany	W.	5	2	3	2					1	1		1			
	C.	1	1						1							
Anson	W.	7	3	4		2	1		1				1		1	1
	C.	15	3	12	1	1	1	2	3		2	1	1		2	1
Ashe	W.	9	3	6		1		1	2				3	1	1	
	C.	1		1				1								
Avery	W.	4	1	3			1		1	1					1	
	C.															
Beaufort	W.	7	3	4		1	2		1	1		1	1			
	C.	28	10	18	2	6	2		2	3	2	3	3	2	2	1
Bertie	W.	6	2	4	1		1		2			1				1
	C.	24	7	17	1	1	1	3	1	2	4	3			3	5
Bladen	W.	1		1									1			
	C.	20	9	11	4	1	3		2	4	1	1			4	
Brunswick	W.	4	3	1				1		1				1	1	
	C.	6	1	5	2				1			2			1	
Buncombe	W.	291	193	98	24	28	28	30	33	20	24	23	16	21	17	27
	C.	73	57	16	7	2	6	7	7	6	7	6	7	8	5	5
Burke	W.	22	11	11	2	2	2	2	3	3	2	1		4		1
	C.	6	1	5				1	1	1	2					
Cabarrus	W.	17	6	11	3		5	2	2	2					1	2
	C.	16	12	4	1	1	2	4		2		2	1	2		1
Caldwell	W.	15	5	10	3	1		2	1	1	2	1		1	2	1
	C.	5	3	2				1		2			1			1
Camden	W.	3	1	2	1	1										
	C.	2	1	1											1	1
Carteret	W.	8	1	7	1			2		1			2	1		1
	C.	4	4		1			1					1			1
Caswell	W.	3	1	2			1					1			1	
	C.	12	2	10	2	1	1	2	1	1	2		1	1		
Catawba	W.	11	5	6		2	1			1	2	1	1		3	
	C.	6	3	3			1			1	2	1		1		
Chatham	W.	5	2	3	1					1	1	1	1			
	C.	6	1	5	1	3				1						1
Cherokee	W.	7	4	3			1			2	1	2				1
	C.															
Chowan	W.	4	2	2		1	2	1					2			1
	C.	5	1	4		2				1		1	1			
Clay	W.	1		1						1						
	C.															
Cleveland	W.	9	4	5		1	2	1				1		3		1
	C.	8	1	7	1		1	1	3		1				1	
Columbus	W.	8	7	1				1	1		1	2		1		2
	C.	11	5	6	4		2	1		1		1	1		1	
Craven	W.	7	4	3			1	1			1	2		2		
	C.	28	12	16	2	3	2	1	1	4	3	2	1	5	4	

TABLE IV—Continued

County		Total	Male	Female	January	February	March	April	May	June	July	August	September	October	November	December
Cumberland.....	W.	13	4	9	2	4	3	2		1						1
	C.	20	13	7	1	1	1	2	3	2	2		1	1	3	3
Currituck.....	W.	3	3				1								1	1
	C.	1	1						1							
Dare.....	W.	1		1							1					
	C.															
Davidson.....	W.	12	6	6	1	1	1		3	1		1		3	1	
	C.	5	2	3	1					1	1		2			
Davie.....	W.	2		2		1	1									
	C.	3	1	2		1			1					1		
Duplin.....	W.	20	5	15		2	2	4	3	2	2	1	1	1	2	
	C.	7	2	5	1		1	2					1	1	1	
Durham.....	W.	22	10	12	1	1	5	1		1	1	1	4	1	3	3
	C.	56	23	33	4	10	4	10	5	3	5	2	1	2	7	3
Edgecombe.....	W.	5	3	2	1		1	1						1		1
	C.	33	13	20	4	3	3	1	3	3	1	3	5	2	3	2
Forsyth.....	W.	31	11	20	1	4	4	3	3	5	3		2	3	1	2
	C.	95	38	57	3	9	9	15	9	12	4	4	9	7	6	8
Franklin.....	W.	4	2	2			1									1
	C.	17	5	12	1	1	1		5	1	2	2	1	1		2
Gaston.....	W.	15	4	11	3	1		1	4	1	1		2		1	1
	C.	11	4	7	1	2		1	2	1			1		1	2
Gates.....	W.	3	1	2	2					1						
	C.	10	6	4	1			2	2		1			2	2	
Graham.....	W.	2	1	1	1	1										
	C.															
Granville.....	W.	7	2	5	1		1		1		1			1	1	1
	C.	16	5	11	2		2	1	3	3	2	1	1		1	
Greene.....	W.	5	2	3				2			1	1			1	
	C.	11	6	5	4		1			2		1		1	1	1
Guilford.....	W.	46	26	20	1	1	7	6	5	7	3	3	4	4	2	3
	C.	41	14	27	3	4	3	4	3	5	5	3	3	2	2	4
Halifax.....	W.	12	5	7		4		1	1	1			1	3		1
	C.	38	19	19	2	3	3	3	6	5	1	1	2	2	9	1
Harnett.....	W.	10	4	6	1				1			2	1	2	2	1
	C.	14	7	7	3	2	2		1		2	1		1		2
Haywood.....	W.	8	3	5	1	1	2	1	1	2						
	C.	2	2			1									1	
Henderson.....	W.	15	7	8	1	5					2		4			3
	C.	5	3	2	2				1		1			1		
Hertford.....	W.	6	3	3				3		1	1		1			
	C.	22	10	12		4	2	3	2	1	5	1	2	1	1	
Hoke.....	W.	18	12	6	2	3	1	1	3	2	1	1		3	1	
	C.	9	4	5		2	1		2			3			1	
Hyde.....	W.	5	4	1		1						1		1	1	1
	C.	1		1								1				
Iredell.....	W.	13	8	5		1	2	1	2	1	3		1	1		1
	C.	18	9	9		1	3	2	4	1	2	1	2	1		1
Jackson.....	W.	5	4	1			1	1	1				1	1		
	I.	2	1	1												1
Johnston.....	W.	12	7	5			2		2	1		1		4	1	1
	C.	13	4	9	1			1		4	2	1		2	2	
Jones.....	W.															
	C.	2	2						1				1			

TABLE IV—Continued

County		Total	Male	Female	January	February	March	April	May	June	July	August	September	October	November	December
Lee.....	W.	2	---	2	1	---	1	---	---	---	---	---	---	---	---	---
	C.	8	2	6	---	1	3	1	---	2	1	---	---	---	---	---
Lenoir.....	W.	8	3	5	---	1	3	---	---	1	---	---	1	1	---	1
	C.	9	4	5	---	2	---	---	1	2	2	---	2	---	---	---
Lincoln.....	W.	3	1	2	1	---	---	---	1	---	---	---	---	---	1	---
	C.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Macon.....	W.	7	3	4	---	1	---	---	1	1	3	1	---	---	---	---
	C.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Madison.....	W.	17	3	14	2	1	2	1	2	4	---	3	---	---	1	1
	C.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Martin.....	W.	7	5	2	---	3	---	---	---	---	1	1	2	---	---	---
	C.	19	10	9	1	3	1	2	---	4	---	3	1	1	2	1
McDowell.....	W.	13	8	5	1	2	1	1	---	---	2	1	1	3	1	---
	C.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mecklenburg.....	W.	33	15	18	3	3	5	1	5	---	1	2	2	3	5	3
	C.	53	27	26	3	5	2	10	10	2	5	1	1	6	3	5
Mitchell.....	W.	3	1	2	1	---	---	---	---	---	1	---	---	1	---	---
	C.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Montgomery.....	W.	3	2	1	---	---	---	1	---	---	1	---	---	---	---	1
	C.	5	2	3	---	1	---	2	---	---	---	---	---	1	1	---
Moore.....	W.	14	5	9	1	1	2	2	1	2	---	---	3	1	---	1
	C.	7	4	3	---	---	1	2	1	---	1	---	---	1	---	1
Nash.....	W.	20	10	10	2	4	1	3	---	2	1	1	---	4	---	2
	C.	23	8	15	1	3	5	2	1	2	2	---	4	1	---	2
New Hanover.....	W.	17	8	9	2	2	1	2	1	2	3	1	---	---	2	1
	C.	36	17	19	4	1	3	---	4	2	4	9	---	3	2	4
Northampton.....	W.	5	1	4	2	1	1	---	1	---	---	---	---	---	---	---
	C.	17	4	13	---	3	1	---	---	1	3	5	1	---	1	2
Onslow.....	W.	3	1	2	---	---	---	---	---	3	---	---	---	---	---	---
	C.	10	4	6	1	---	---	---	---	1	2	1	1	2	1	1
Orange.....	W.	5	2	3	---	---	1	1	---	2	---	---	1	---	---	---
	C.	12	6	6	1	1	---	1	3	---	1	---	4	---	---	1
Pamlico.....	W.	2	1	1	---	---	---	---	---	1	---	---	---	---	1	---
	C.	1	---	1	---	---	1	---	---	---	---	---	---	---	---	---
Pasquotank.....	W.	4	2	2	1	---	---	---	1	---	1	---	---	---	---	1
	C.	24	9	15	---	2	4	2	1	1	2	3	1	3	3	2
Pender.....	W.	1	1	---	---	1	---	---	---	---	---	---	---	---	---	---
	C.	16	9	7	5	3	---	2	1	---	---	1	1	1	2	---
Perquimans.....	W.	6	2	4	---	2	1	---	---	---	2	---	---	1	---	---
	C.	6	2	4	1	---	---	1	---	---	---	1	---	---	2	1
Person.....	W.	7	4	3	---	---	1	1	1	1	1	---	1	---	---	1
	C.	20	4	16	1	1	2	1	5	2	1	1	1	3	---	2
Pitt.....	W.	10	3	7	---	1	1	1	1	1	3	---	---	1	1	---
	C.	28	15	13	1	2	1	6	2	3	2	1	1	3	3	3
Polk.....	W.	4	1	3	1	---	1	2	---	---	---	---	---	---	---	---
	C.	2	1	1	---	1	---	---	---	---	1	---	---	---	---	---
Randolph.....	W.	12	2	10	1	---	2	1	2	2	2	---	---	---	1	1
	C.	7	3	4	1	1	---	1	3	1	---	---	---	---	---	---
Richmond.....	W.	4	2	2	1	---	1	1	---	---	---	---	---	1	---	---
	C.	23	12	11	2	4	---	4	4	3	3	---	---	---	1	2
Robeson.....	W.	11	8	3	---	2	1	---	---	2	2	---	1	---	1	---
	I.	3	---	3	---	---	---	---	2	---	1	---	---	---	---	---
Rockingham.....	C.	23	9	14	2	5	3	3	2	3	---	---	2	2	1	---
	W.	18	12	6	4	1	1	1	3	---	2	2	2	---	1	1
Rockingham.....	W.	18	12	6	4	1	1	1	3	---	2	2	2	---	1	1
	C.	21	8	13	3	2	2	2	1	4	1	4	1	1	---	---

TABLE IV—Continued

County		Total	Male	Female	January	February	March	April	May	June	July	August	September	October	November	December
Rowan.....	W.	10	4	6	2	1	2			2		1		2		
	C.	20	8	12	1		1	3	1	3	1	2	2	4	1	1
Rutherford.....	W.	19	7	12	1	3		2	1	2	1	4	1		2	2
	C.	11	4	7	5	1		1	1		2			1		
Sampson.....	W.	17	11	6	1	1		3	3		1	3	1	2		2
	I.	1		1											1	
Scotland.....	C.	20	11	9	4	1		3	2		2	1	3	1	2	1
	W.	5	3	2				1			2		1		1	
Stanly.....	C.	18	11	7	4	2	1		2	2		2	1	1	1	2
	W.	6	3	3	1	1	1		2							1
Stokes.....	C.	2	1	1								1		1		
	W.	6	1	5			5							1		
Surry.....	C.	5	4	1		1						2				2
	W.	18	6	12	4	2	3	2	1	1		1	2		2	
Swain.....	C.	3		3				1	1			1				
	W.	3	2	1			1					1				1
Transylvania.....	I.	2		2		1				1						
	W.	4	3	1						2		1		1		
Tyrrell.....	C.															
	W.	2		2	1				1							
Union.....	C.															
	W.	12	2	10	1	1	4	1				1	1	2	1	
Vance.....	C.	29	13	16	2		4	1	5		4	4	2	4	3	
	W.	10	6	4	2		1	3		2		1			1	
Wake.....	C.	21	9	12		1	1	2	6	1	1			3	4	2
	W.	30	8	22	3	3	3	1	1	4	3	3	1	3	2	3
Warren.....	C.	61	22	39	6	5	8	6	6	3	5	3	8	1	4	6
	W.	3	1	2			1			1				1		
Washington.....	C.	17	6	11	1		1	2	2	3	1	1		2	1	3
	W.	3	1	2									1		2	
Watauga.....	C.	2	1	1						1				1		
	W.	4	1	3				1	1	1			1			
Wayne.....	C.															
	W.	16	5	11	1	1	3	1	1	2	1		2	1	3	
Wilkes.....	C.	57	21	36	4	4	12	7	4	2	5	3	5	4	2	5
	W.	10	4	6	1		1		5				2	1		
Wilson.....	C.	6	5	1	2		1		1		2					
	W.	6	3	3				1	2	1						2
Yadkin.....	C.	38	17	21		1	4	3	6	6	2	2	6	4	2	2
	W.	11	6	5	1	5		1					2	1	1	
Yancey.....	C.	1	1											1		
	W.	4	1	3				1		1		1			1	
	C.															

W.—White. I.—Indian. C.—Colored.



TABLE V.—OCCUPIED MALES—NUMBER AND DISTRIBUTION FOR TUBERCULOSIS (ALL FORMS) OF MALES ENGAGED IN CERTAIN SPECIFIED OCCUPATIONS, ALSO BY AGE AND RACES, FOR 1921

Occupations	Race	Total for Tuberculosis	Under 1 Year	1 to 5 Years	5 to 10 Years	10 to 15 Years	15 to 20 Years	20 to 30 Years	30 to 40 Years	40 to 50 Years	50 to 60 Years	60 to 70 Years	70 to 80 Years	80 to 90 Years	90 to 100 Years	100 and Over	Unknown
1. All occupations reported.....	W.	592	6	12	7	3	18	169	154	74	60	53	31	4	—	—	1
	I.	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
	C.	628	12	10	12	16	74	233	105	74	39	25	17	3	—	—	8
2. Professional.....	W.	22	—	—	—	—	—	3	10	5	—	3	1	—	—	—	—
	C.	5	—	—	—	—	—	2	—	—	1	—	—	—	—	—	—
3. Clerical and official (total)	W.	17	—	—	—	—	—	4	7	1	2	1	1	1	—	—	—
	C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4. Bookkeepers, clerks, copyists and stenographers.....	W.	32	—	—	—	—	—	13	15	1	2	1	—	—	—	—	—
	C.	3	—	—	—	—	—	2	1	—	—	—	—	—	—	—	—
5. Mercantile and trading.....	W.	16	—	—	—	—	—	5	3	5	2	1	—	—	—	—	—
	C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6. Merchants and dealers.....	W.	22	—	—	—	—	—	3	6	5	4	3	—	—	—	—	1
	C.	3	—	—	—	—	—	1	1	—	1	—	—	—	—	—	—
7. Public entertainment.....	W.	2	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—
	C.	4	—	—	—	—	—	1	3	—	—	—	—	—	—	—	—
8. Personal service, police and military (total).....	W.	*95	—	—	—	—	1	61	26	4	2	1	—	—	—	—	—
	C.	*36	—	—	—	—	—	33	3	—	—	—	—	—	—	—	—
9. Janitors, sextons, porters, waiters, and cooks.....	W.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	C.	26	—	—	—	—	1	9	6	5	3	1	—	—	—	—	1
10. Laboring and servant.....	W.	16	—	—	—	—	—	7	3	2	2	—	—	2	—	—	—
	C.	190	—	—	—	—	18	80	40	30	14	5	2	—	—	—	1
11. Manufacturing and mechanical industry (total).....	W.	9	—	—	—	—	—	3	2	3	1	—	—	—	—	—	—
	C.	2	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—
12. Carpenters and joiners.....	W.	25	—	—	—	—	—	3	8	6	6	1	1	—	—	—	—
	C.	12	—	—	—	—	—	1	1	2	2	3	3	—	—	—	—
13. Cigar makers and tobacco workers.....	W.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
	C.	22	—	—	—	—	3	12	3	1	—	1	2	—	—	—	—
14. Mill and factory operatives (textile).....	W.	22	—	—	—	—	—	6	9	3	3	—	—	1	—	—	—
	C.	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—
15. Agriculture, transportation and other outdoor (total).....	W.	20	—	—	—	—	—	7	7	2	2	2	—	—	—	—	—
	C.	9	—	—	—	—	1	3	—	3	1	—	—	1	—	—	—
16. Draymen, hackmen, teamsters, etc.....	W.	2	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—
	C.	12	—	—	—	—	2	3	2	2	—	—	—	1	—	—	2
17. Farmers, planters, and farm laborers.....	W.	189	—	—	—	—	4	35	40	29	28	31	19	3	—	—	—
	I.	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
	C.	198	—	—	—	2	32	68	35	26	16	12	4	2	—	—	1
18. No occupation stated.....	W.	102	6	12	7	3	13	18	18	5	6	8	6	—	—	—	—
	C.	105	12	10	12	14	17	18	7	5	1	3	2	1	—	—	3

\*86 white soldiers died in U. S. P. Hospital, Buncombe County.

\*33 colored soldiers died in U. S. P. Hospital, Buncombe County.

TABLE VI.—OCCUPIED FEMALES—NUMBER AND DISTRIBUTION, FOR TUBERCULOSIS (ALL FORMS) OF FEMALES ENGAGED IN CERTAIN SPECIFIED OCCUPATIONS, ALSO BY AGE AND RACE, FOR 1921

Occupations	Race	Total for Tuberculosis	Under 1 Year	1 to 5 Years	5 to 10 Years	10 to 15 Years	15 to 20 Years	20 to 30 Years	30 to 40 Years	40 to 50 Years	50 to 60 Years	60 to 70 Years	70 to 80 Years	80 to 90 Years	90 to 100 Years	100 and Over	Unknown
1. All occupations reported.....	W.	616	5	7	4	11	47	190	144	87	42	37	32	7	—	—	3
	I.	7	—	1	—	—	—	2	1	1	1	1	—	—	—	—	—
	C.	797	4	15	17	33	127	316	139	87	26	17	8	2	—	—	6
2. Musicians and teachers of music.....	W.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3. Teachers in school.....	W.	3	—	—	—	—	1	—	1	1	—	—	—	—	—	—	—
	C.	6	—	—	—	—	1	2	2	1	—	—	—	—	—	—	—
4. Stenographers and typewriters.....	W.	9	—	—	—	—	—	4	4	1	—	—	—	—	—	—	—
	C.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5. Bookkeepers, clerks, and copyists.....	W.	8	—	—	—	—	1	6	1	—	—	—	—	—	—	—	—
	C.	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
6. Laundresses.....	W.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	C.	15	—	—	—	—	1	9	4	—	1	—	—	—	—	—	—
7. Nurses and midwives.....	W.	6	—	—	—	—	—	4	1	1	—	—	—	—	—	—	—
	C.	8	—	—	—	1	1	3	—	1	—	1	—	1	—	—	—
8. Cooks and servants.....	W.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	C.	47	—	—	—	1	11	22	7	4	1	—	—	—	—	—	1
9. Cigar makers and tobacco workers.....	W.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	C.	33	—	—	—	—	8	21	3	1	—	—	—	—	—	—	—
10. Mill and factory operatives (textiles).....	W.	12	—	—	—	—	3	7	2	—	—	—	—	—	—	—	—
	C.	5	—	—	—	—	—	5	—	—	—	—	—	—	—	—	—
11. Dressmakers and seamstresses.....	W.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—
	C.	3	—	—	—	—	—	—	2	1	—	—	—	—	—	—	—
12. All other occupations.....	W.	2	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—
	C.	55	—	—	—	—	16	17	13	3	3	3	—	—	—	—	—
13. No occupation stated.....	W.	575	5	7	4	11	42	169	135	83	41	36	32	7	—	—	3
	I.	7	—	1	—	—	—	2	1	1	1	1	—	—	—	—	—
	C.	624	4	15	17	31	89	236	108	76	21	13	8	1	—	—	5

TABLE VII.—DEATHS (EXCLUSIVE OF STILLBIRTHS) FROM

Middle Western Counties	Race	Total	Total Deaths (Under 1 Year of Age)	Total Deaths (1 Year of Age)	Total Deaths (2 Years of Age)	Total Deaths (Under 5 Years)	Typhoid Fever	Malaria	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Dysentery
Totals.....	White ..	17795	3985	1011	352	5700	155	75	11	105	31	223	288	189	150
	Indian..	156	47	25	1	80	1			1		1		1	
	Colored	11059	2499	527	170	3377	151	97	10	24	5	158	77	108	66
Alamance.....	White ..	229	36	12	3	53	2			1	1	1	2	1	3
	Colored	93	21	3	1	25	2							1	1
Alexander.....	White ..	101	18	7	3	32						1	5	2	1
	Colored	14	2	2	1	5									
Anson.....	White ..	109	22	6	3	32	2					4	1	1	
	Colored	119	30	2	2	35		1				6	2	1	
Burke.....	White ..	256	39	7	7	57	1			5	1		5	4	9
	Colored	18	1	1	1	3									
Cabarrus.....	White ..	259	54	20	6	87	2			2	1		1	6	1
	Colored	93	15	3	2	22	1					3			
Caldwell.....	White ..	147	29	6	9	46	3			1	3	4	4	3	1
	Colored	30	3	4		9							1		
Caswell.....	White ..	69	14	3		21				1	1	1	1	1	1
	Colored	85	18	2	2	23							2	1	
Catawba.....	White ..	269	57	17	5	83				3		2	4		1
	Colored	64	19	2	1	24	1								
Cleveland.....	White ..	220	51	9		67	2					4	4	4	3
	Colored	73	18	1	1	22		1						2	
Davidson.....	White ..	287	87	6	3	101	3					4	3	1	3
	Colored	51	9	4		14						1		1	1
Davie.....	White ..	101	22	3		27	1		1				1	1	
	Colored	37	5	1	1	8	1			1					
Forsyth.....	White ..	533	122	34	3	168		1		3	2	7	6	5	
	Colored	445	106	15	8	131	3		1	1	1	5	4	1	1
Gaston.....	White ..	361	96	26	8	141	4		1	3	2	2	9	4	3
	Colored	126	23	3	2	30	3		1				1	2	1
Guilford.....	White ..	674	153	34	14	209	6	1	1	3		7	9	10	5
	Colored	280	56	13	3	77	6			2		2	3	4	1
Iredell.....	White ..	306	62	7	5	79	1	2		4		2	3	2	1
	Colored	102	22	7	2	33	1			1		1			
Lincoln.....	White ..	126	26	5		35	4			1			1		
	Colored	24	5	1		6						1			
Mecklenburg.....	White ..	568	102	28	12	154				6	2	8	9	9	3
	Colored	408	62	18	3	90	1	3		3		6	3	5	5
Montgomery.....	White ..	60	15	1		18		1		1	1				
	Colored	34	5		1	6									
Orange.....	White ..	122	28	1		32			1				1		1
	Colored	82	19	8	4	29	1							1	
Person.....	White ..	131	19	11	3	37	2					2	2		2
	Indian..	2													
	Colored	140	26	9	1	41	1					8			2
Randolph.....	White ..	264	65	14	5	88	3			1		3	3	1	3
	Colored	51	11	1		12	1							2	
	White ..	159	42	9	4	57						3	2	1	
Richmond.....	Indian..	1													
	Colored	161	31	5	2	41	1							7	1

CERTAIN CAUSES, FOR COUNTIES, BY RACES, FOR 1921

Acute Poliomyelitis	Meningococcus Meningitis	Tuberculosis (All Forms)	Syphilis	Gonococcus Infection	Cancers (All Forms)	Pellagra	Broncho-pneumonia	Pneumonia	Diarrhea and Enteritis (Under 2 Years)	The Puerperal State	Premature Birth; Injury of Birth	Other Diseases Peculiar to Early Infancy	Suicides (All Means)	Conflagration	Burns (Conflagration Excepted)	Accidental Drowning	Railroad Accidents	Automobile Accidents	Lightning	Homicides by Firearms	Homicides by Other Means
13	1	1208	22		774	178	558	755	1073	288	1299	28	91	2	125	54	70	106	14	74	25
		8	2		2	1	6	8	24	3	6	1			1					3	
4		1425	80		311	152	280	468	517	235	528	20	22	4	34	50	35	18	2	115	29
		17			10	3	5	9	14	2	11		3		3			2			
		14			4		2	6	1	2	9						2	1		1	1
		4			8		4	4	8	1	3				1				1		
		3						1	2		1										
		7			6	1	4	4	8	1	4		1		1	1				1	
		15	2		1	2	3	5	3	6	4							1			
		22			9	22	5	4	5	1	10		2		1					1	2
1		6						1			1										
		17			13	4	8	15	17	2	24	1	2		5		1	3		2	1
		16	2		3	2	1	4		1	4	1			1					1	1
1		15	1		3	2	4	8	3	1	5		1			1		1		2	
		5			3	1	1	2	3											1	
		3			5		2	5	2	1	4										
		12			7		3	4	2	1	6					1				1	
		11			15	1	11	11	16	5	26		1		1	2		4	1	1	
		6			3		5		2		7				1					1	1
		9			20	1	14	8	10	3	19	1	1		3				1		
		8			6	1	3	4	3		4				1						
1		12			19	1	10	14	9	3	25				2	1		2		1	
		5			4		2	5	3		1				2						
		2			7	3		3	2		10	1	1		2		2				
		3			5		1				1										
		31	1		28	6	21	17	36	6	57		4		4		1	3		1	1
		95	7		10	13	20	15	29	7	35			1	3	1	1	2		5	3
		15			18	7	12	8	21	6	40	1	2		7	1	4		1	1	
		11			10	3	9	5	3	1	4	1	1		2	1				1	
		46	2		31	6	19	29	41	12	66	1	3			1	2	9		1	
		41	3		12	5	3	24	15	7	22	1	1		2	1	2	1		4	1
		13			26	2	11	10	17	9	22	2			2	2	1	3			2
		18	2		4		5	4	3	1	2										
		3			10		2	4	9	2	8				3			2	1		
			1		2				2	1	2										
		33			23	10	23	36	16	10	33	1	2		5	2	7	7	1	1	1
		53	3		12	8	14	20	6	8	15	1			1		3	1		6	1
		3			5		1	2	1	1	3							1			
		5	1		1			2			3										
		5			9	2	2	4	7	2	9		2					2			
		12	1		1	2	3		5	2	4				3		1				
		7			7		8	11	9	4	5		2		1			2		1	1
								2													
		20			2		6	20	3	3	3	1					1			1	
		12			9	1	9	12	10	4	25		2		2						1
		7			3			2	1	1	5										
		4			8	1	2	14	16	4	17				2		1			1	
		23	1		3	3	2	4	3	5	7		3		2	1	1	1	1	3	



TABLE VII—

Middle Western Counties	Race	Total	Total Deaths (Under 1 Year of Age)	Total Deaths (1 Year of Age)	Total Deaths (2 Years of Age)	Total Deaths (Under 5 Years)	Typhoid Fever	Malaria	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Dysentery
Rockingham-----	White ..	340	78	17	8	112	7	---	---	---	1	1	4	5	3
	Colored	169	31	11	3	49	5	---	---	1	---	---	1	3	4
Rowan-----	White ..	310	63	14	5	89	6	1	---	2	---	2	6	4	1
	Colored	154	38	7	2	48	3	1	---	---	---	5	1	2	---
Stanly-----	White ..	162	50	11	1	64	---	---	---	2	1	7	4	---	1
	Colored	35	9	---	1	11	---	---	---	---	---	---	2	---	---
Stokes-----	White ..	118	25	7	6	41	1	---	---	---	---	1	3	4	2
	Colored	19	2	---	1	4	---	---	---	---	---	---	3	---	---
Surry-----	White ..	285	86	24	6	123	2	---	---	9	---	2	8	---	---
	Colored	33	10	1	---	13	---	---	---	---	---	---	---	---	---
Union-----	White ..	201	60	11	2	77	3	2	---	---	---	7	3	1	1
	Colored	152	38	6	---	44	3	---	---	---	---	4	1	1	---
Wilkes-----	White ..	303	91	20	10	130	4	---	---	3	1	5	9	1	2
	Colored	33	6	1	1	10	---	---	---	---	---	---	---	---	---
Yadkin-----	White ..	122	28	5	5	42	1	---	---	4	---	2	6	1	1
	Colored	25	4	---	---	4	---	---	---	---	---	1	---	---	---
Total-----	White ..	7192	1640	375	136	2302	60	8	4	55	17	82	119	72	52
	Indian ..	3	---	---	---	---	---	---	---	---	---	---	---	---	---
	Colored	3150	645	133	46	869	34	6	2	10	1	43	24	35	17

Continued

Acute Poliomyelitis	Meningococcus Meningitis	Tuberculosis (All Forms)	Syphilis	Gonococcus Infection	Cancers (All Forms)	Pellagra	Broncho-pneumonia	Pneumonia	Diarrhea and Enteritis (Under 2 Years)	The Puerperal State	Premature Birth; Injury at Birth	Other Diseases Peculiar to Early Infancy	Suicides (All Means)	Conflagration	Burns (Conflagration Excepted)	Accidental Drowning	Railroad Accidents	Automobile Accidents	Lightning	Homicides by Firearms	Homicides by Other Means
-----	-----	18	-----	-----	11	4	7	8	20	6	36	-----	2	-----	4	1	-----	4	-----	3	1
-----	-----	21	-----	-----	6	1	2	8	13	5	3	-----	1	-----	3	-----	1	-----	1	-----	-----
-----	-----	10	1	-----	17	6	16	15	13	4	15	1	1	-----	2	-----	4	3	-----	1	-----
-----	-----	20	-----	-----	10	1	3	10	5	3	11	-----	-----	-----	1	-----	-----	1	-----	-----	2
-----	-----	6	-----	-----	3	4	5	6	15	4	12	1	-----	-----	-----	1	1	2	-----	1	-----
-----	-----	2	1	-----	-----	1	-----	4	1	-----	1	-----	-----	-----	1	-----	-----	-----	-----	1	-----
-----	-----	6	-----	-----	5	2	7	6	9	-----	7	1	1	-----	1	1	1	-----	-----	2	-----
-----	-----	5	-----	-----	1	-----	1	-----	-----	-----	-----	-----	-----	-----	1	-----	-----	-----	-----	-----	-----
1	-----	18	-----	-----	14	2	26	9	13	4	28	-----	1	-----	1	-----	-----	5	-----	1	-----
-----	-----	3	2	-----	1	-----	2	-----	2	-----	4	-----	-----	-----	4	-----	-----	-----	-----	-----	-----
-----	-----	12	1	-----	9	2	7	8	7	2	22	1	1	-----	3	-----	-----	2	1	1	-----
-----	-----	29	-----	-----	3	2	4	14	4	2	4	3	-----	-----	1	2	-----	-----	-----	-----	-----
-----	-----	10	-----	-----	12	2	6	8	27	3	14	-----	1	-----	6	-----	-----	2	-----	-----	1
-----	-----	6	-----	-----	2	-----	2	-----	1	1	1	-----	-----	-----	1	-----	-----	-----	-----	1	-----
-----	-----	11	-----	-----	6	-----	7	7	7	1	9	-----	-----	-----	-----	-----	-----	-----	-----	1	-----
-----	-----	1	-----	-----	1	-----	3	1	1	2	-----	-----	-----	-----	-----	1	-----	-----	-----	-----	-----
3	-----	382	6	-----	366	95	258	299	388	104	569	12	36	-----	62	14	25	59	7	24	11
1	-----	465	26	-----	120	45	100	165	116	59	164	8	6	1	27	8	12	8	1	28	10

TABLE VII—

Middle Eastern Counties	Race	Total	Total Deaths (Under 1 Year of Age)	Total Deaths (1 Year of Age)	Total Deaths (2 Years of Age)	Total Deaths (Under 5 Years)	Typhoid Fever	Malaria	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Dysentery
Bertie.....	White..	89	21	7	1	32	1	1	---	---	---	5	3	---	---
	Colored	196	67	9	4	82	1	3	---	1	---	20	3	2	3
Bladen.....	White..	85	18	5	1	25	1	---	---	---	---	4	1	1	---
	Colored	125	27	7	1	37	4	3	---	---	1	---	---	1	---
Chatham.....	White..	130	27	5	2	38	1	1	---	2	---	---	1	---	1
	Colored	86	17	4	4	25	---	1	1	---	---	1	1	1	---
Cumberland.....	White..	289	47	19	7	78	1	---	---	---	---	4	4	3	1
	Colored	200	47	10	4	63	1	4	---	---	---	2	---	5	1
Duplin.....	White..	208	51	6	6	65	1	3	---	2	---	1	---	1	1
	Colored	135	29	11	3	46	5	---	---	---	---	---	---	1	1
Durham.....	White..	341	69	10	3	87	4	---	2	---	---	1	5	14	4
	Colored	278	59	9	3	72	9	---	---	---	---	---	---	7	1
Edgecombe.....	White..	174	51	13	2	67	1	2	---	2	1	4	2	2	1
	Colored	308	86	21	4	118	6	5	---	---	---	1	1	---	9
Franklin.....	White..	153	39	5	6	51	---	---	---	---	---	1	---	4	---
	Colored	188	45	9	4	63	4	---	---	---	---	1	2	5	3
Granville.....	White..	121	23	6	1	33	---	---	---	---	---	3	1	6	---
	Colored	118	19	3	---	23	2	---	---	---	---	---	---	1	1
Greene.....	White..	72	17	6	---	23	---	---	---	---	---	1	1	---	1
	Colored	110	28	16	4	51	1	1	---	---	---	1	---	2	2
Halifax.....	White..	162	42	9	6	62	---	1	1	---	1	2	1	1	1
	Colored	328	68	18	2	93	3	4	3	---	---	2	2	2	1
Harnett.....	White..	198	46	29	10	88	6	1	---	---	1	6	4	---	2
	Colored	99	30	9	---	42	1	1	---	---	---	9	3	---	1
Hertford.....	White..	73	22	2	1	26	1	---	---	1	---	2	1	---	1
	Colored	132	42	8	4	57	1	2	---	---	---	---	2	2	---
Hoke.....	White..	63	7	2	2	12	---	---	---	---	---	1	3	---	---
	Indian..	2	2	---	---	2	---	---	---	---	---	---	---	---	---
	Colored	98	23	5	3	33	3	1	2	---	---	1	1	1	1
Johnston.....	White..	386	111	46	11	174	2	1	---	4	1	4	4	6	8
	Colored	149	41	15	4	63	4	2	---	4	---	4	---	3	---
Lee.....	White..	101	12	7	1	22	1	---	---	1	1	1	4	2	---
	Colored	44	11	1	---	12	1	---	---	---	---	---	1	---	---
Lenoir.....	White..	205	49	15	3	71	1	2	---	---	3	1	3	1	1
	Colored	176	42	12	---	59	4	1	---	---	2	---	1	1	---
Martin.....	White..	117	35	11	3	54	3	2	---	---	2	4	---	1	1
	Colored	125	37	4	3	46	2	1	---	---	---	---	1	---	---
Moore.....	White..	120	28	6	2	39	---	---	---	---	---	2	2	---	---
	Colored	46	4	1	---	6	---	1	---	---	---	1	1	---	---
Nash.....	White..	269	76	14	10	100	1	1	1	1	---	4	---	4	2
	Colored	224	63	17	2	83	2	3	---	---	---	5	---	6	---
Northampton.....	White..	92	13	6	3	26	---	4	---	---	---	2	5	---	---
	Colored	162	47	12	4	68	1	4	---	1	---	5	2	2	---
Pitt.....	White..	219	55	15	3	80	3	3	---	---	1	4	4	---	2
	Colored	277	80	13	3	104	6	5	---	---	1	4	5	---	1
	White..	292	61	35	5	108	1	---	---	1	1	4	3	7	4
Robeson.....	Indian..	112	36	18	1	60	1	---	---	1	---	1	---	---	---
	Colored	210	59	16	3	85	1	1	---	---	---	9	---	2	1
	White..	298	74	32	5	120	---	1	---	6	---	5	8	1	3
Sampson.....	Indian..	10	2	1	---	3	---	---	---	---	---	---	---	1	---
	Colored	189	54	7	5	68	4	1	---	---	---	1	1	---	---

Continued

Acute Poliomyelitis	Meningococcus Meningitis	Tuberculosis (All Forms)	Syphilis	Gonococcus Infection	Cancers (All Forms)	Pellagra	Broncho-pneumonia	Pneumonia	Diarrhea and Enteritis (Under 2 Years)	The Puerperal State	Premature Birth; Injury at Birth	Other Diseases Peculiar to Early Infancy	Suicides (All Means)	Conflagration	Burns (Conflagration Excepted)	Accidental Drowning	Railroad Accidents	Automobile Accidents	Lightning	Homicides by Firearms	Homicides by Other Means
---	---	6	---	---	1	---	1	1	3	---	7	---	1	---	1	1	---	---	---	---	---
---	---	24	2	---	1	---	6	8	2	4	7	---	1	---	---	---	---	---	---	2	2
---	---	1	---	---	4	---	2	6	1	2	1	---	1	---	---	---	---	---	---	---	---
---	---	20	---	---	2	---	2	3	6	4	2	---	---	---	---	3	1	---	---	---	---
---	---	5	---	---	6	---	3	6	6	1	9	---	---	---	2	1	---	---	---	---	---
---	---	6	---	---	5	1	3	5	2	2	4	---	1	---	---	---	1	---	---	3	---
---	---	13	---	---	9	2	10	20	14	7	17	---	3	---	3	1	1	2	---	2	---
---	---	20	---	---	3	1	8	10	11	3	14	---	---	---	5	---	2	2	---	2	---
---	---	20	---	---	8	1	3	8	11	7	23	1	1	---	1	---	2	---	---	1	1
---	---	7	3	---	4	3	3	3	11	8	8	---	1	---	2	---	1	---	---	---	---
---	1	22	2	---	17	2	12	7	16	4	31	---	3	---	2	---	1	6	---	1	---
---	---	56	2	---	9	11	9	8	15	6	19	---	---	---	1	---	---	---	---	2	1
---	---	5	---	---	10	---	2	5	19	4	15	---	1	---	---	1	1	---	---	---	---
---	---	33	2	---	6	1	9	19	25	7	20	---	1	---	4	4	1	---	---	1	---
---	1	4	1	---	7	2	6	9	6	3	17	1	---	---	---	---	---	2	---	---	---
---	---	17	2	---	4	8	6	5	3	4	12	---	---	---	2	1	---	---	1	3	---
---	1	7	---	---	6	1	4	6	3	1	6	---	---	---	---	---	---	---	---	1	---
---	---	16	---	---	2	3	2	5	3	3	2	---	---	---	---	---	---	---	---	1	---
---	1	5	---	---	5	---	---	3	5	1	3	---	1	---	1	---	---	1	---	1	---
---	---	11	---	---	4	---	6	2	5	3	4	1	---	---	2	---	---	---	---	1	---
---	---	12	---	---	---	---	5	5	13	2	14	---	1	---	---	1	---	---	---	---	---
---	---	38	2	---	5	4	4	17	15	7	6	1	1	1	1	3	1	---	---	5	---
---	---	10	---	---	3	4	9	13	21	5	12	---	1	---	2	1	1	---	1	---	---
---	---	14	1	---	5	---	5	6	7	4	3	---	---	---	1	---	---	---	---	1	---
---	---	6	---	---	2	1	4	1	4	1	7	---	---	---	1	---	---	---	---	---	---
---	---	22	---	---	5	2	2	2	11	3	8	1	---	---	---	1	---	---	---	---	---
---	---	18	1	---	1	---	4	1	1	2	3	---	---	---	---	---	1	---	---	---	---
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
---	---	9	---	---	2	---	1	2	7	1	3	---	---	---	2	---	---	---	---	1	---
---	1	12	---	---	4	3	12	19	52	7	34	---	5	---	---	1	2	---	---	1	2
---	---	13	---	---	2	1	---	8	7	4	9	---	1	---	1	---	1	---	---	---	---
---	---	2	---	---	6	1	1	4	3	---	6	---	---	---	1	1	1	---	---	---	1
---	---	8	---	---	1	2	1	1	1	---	4	---	---	---	---	1	---	---	---	---	---
---	---	8	---	---	9	---	6	10	18	5	13	---	2	---	---	2	1	---	---	2	---
---	---	9	---	---	5	---	2	4	12	8	8	1	---	---	2	3	---	2	---	2	---
---	---	7	---	---	4	---	7	5	11	1	8	---	---	---	---	1	---	1	---	---	---
---	---	19	---	---	3	---	3	8	6	2	10	1	---	---	---	1	1	---	---	1	---
---	---	14	---	---	5	1	6	4	3	---	13	1	1	---	1	1	1	---	---	---	1
---	---	7	---	---	---	---	1	1	---	1	---	---	---	---	---	---	---	---	---	1	---
---	1	20	---	---	9	1	7	9	14	4	29	---	2	---	---	---	1	---	---	---	1
---	---	23	1	---	4	2	2	5	24	10	18	---	---	---	1	1	1	1	---	6	---
---	---	5	---	---	4	---	2	6	7	1	4	---	---	---	1	---	---	---	---	---	---
---	---	17	1	---	5	4	1	3	7	3	10	---	---	---	3	---	---	---	---	---	---
---	1	10	---	---	14	---	6	7	18	6	12	---	---	---	1	1	1	---	---	---	---
---	---	28	2	---	9	2	13	9	12	2	8	1	1	---	6	---	1	---	---	2	---
---	---	11	---	---	12	6	7	10	43	9	11	---	1	---	1	1	2	1	2	---	---
---	---	3	2	---	---	---	2	5	20	1	3	1	---	---	1	---	---	---	---	2	---
---	---	23	4	---	6	2	10	8	17	2	6	1	---	---	2	---	---	---	---	4	---
---	---	17	1	---	4	2	12	22	28	6	27	---	---	---	1	1	1	---	---	2	---
---	---	1	---	---	---	---	1	---	---	1	---	---	---	---	---	---	---	---	---	---	---
---	---	20	1	---	3	1	5	9	13	4	8	1	1	---	2	3	1	---	---	2	---



TABLE VII—

Middle Eastern Counties	Race	Total	Total Deaths (Under 1 Year of Age)	Total Deaths (1 Year of Age)	Total Deaths (2 Years of Age)	Total Deaths (Under 5 Years)	Typhoid Fever	Malaria	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Dysentery
	{ White ..	76	29	10	2	42	1	---	---	---	---	1	1	---	1
	{ Indian..	1	1	---	---	1	---	---	---	---	---	---	---	---	---
Scotland.....	{ Colored	140	27	10	3	42	3	---	---	---	---	---	---	2	2
	{ White ..	116	26	6	---	32	---	---	---	---	---	3	1	---	1
Vance.....	{ Colored	164	38	4	2	45	---	---	---	---	---	---	2	4	2
	{ White ..	604	88	23	6	128	3	1	---	2	---	6	8	2	2
Wake.....	{ Colored	495	108	19	9	143	6	1	---	1	---	14	5	---	1
	{ White ..	80	14	8	1	26	1	---	---	---	---	2	3	---	2
Warren.....	{ Colored	199	60	14	5	80	2	1	---	---	---	4	3	2	---
	{ White ..	235	56	16	3	79	6	3	---	---	---	1	---	4	---
Wayne.....	{ Colored	379	71	8	2	84	6	5	---	---	---	---	---	2	4
	{ White ..	288	64	20	5	93	3	1	1	---	1	8	---	4	3
Wilson.....	{ Colored	284	67	16	6	95	4	---	1	---	---	7	---	4	1
	{ White ..	5656	1271	394	111	1881	43	28	5	22	13	87	73	64	43
	{ Indian..	125	41	19	1	66	1	---	---	1	---	1	---	1	---
Totals.....	{ Colored	5664	1396	308	91	1888	87	51	7	7	4	92	37	56	36

Continued

Acute Poliomyelitis	Meningococcus Meningitis	Tuberculosis (All Forms)	Syphilis	Gonococcus Infection	Cancers (All Forms)	Pellagra	Broncho-pneumonia	Pneumonia	Diarrhea and Enteritis (Under 2 Years)	The Puerperal State	Premature Birth; Injury at Birth	Other Diseases Peculiar to Early Infancy	Suicides (All Means)	Conflagration	Burns (Conflagration Excepted)	Accidental Drowning	Railroad Accidents	Automobile Accidents	Lightning	Homicides by Firearms	Homicides by Other Means
-----	-----	5	-----	-----	1	1	1	-----	15	-----	11	-----	-----	-----	1	-----	-----	2	1	-----	-----
-----	-----	18	-----	-----	1	1	7	12	7	12	1	9	-----	-----	3	-----	-----	-----	-----	1	-----
-----	-----	10	-----	-----	3	2	4	6	3	2	10	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	21	-----	-----	5	5	1	13	5	5	6	-----	1	-----	-----	-----	-----	-----	1	-----	-----
-----	-----	30	1	-----	23	16	19	31	20	5	39	1	4	-----	2	2	7	4	-----	2	-----
-----	-----	61	5	-----	13	11	15	21	16	11	31	-----	-----	5	1	2	-----	-----	6	1	-----
-----	-----	3	-----	-----	4	1	1	6	7	2	2	-----	2	-----	1	1	-----	-----	1	-----	-----
-----	-----	17	-----	-----	7	6	5	9	9	4	13	1	-----	-----	1	-----	-----	-----	4	1	-----
-----	-----	16	1	-----	9	1	5	6	30	5	19	-----	-----	3	2	-----	-----	1	-----	-----	-----
1	-----	57	15	-----	8	18	3	8	20	8	26	1	-----	-----	1	1	-----	-----	5	1	-----
-----	-----	6	1	-----	7	-----	10	4	23	9	25	-----	2	-----	1	-----	5	4	-----	3	1
-----	-----	38	-----	-----	9	-----	5	12	17	7	6	-----	-----	-----	4	1	-----	1	-----	7	1
6	1	310	8	-----	201	48	171	240	418	102	428	4	32	-----	27	20	27	25	5	18	8
-----	-----	4	2	-----	2	-----	3	6	20	3	5	1	-----	-----	1	-----	-----	-----	-----	2	-----
1	-----	672	43	-----	137	88	141	216	296	132	284	10	9	1	51	23	15	6	1	64	7

TABLE VII—

Twenty Extreme Western Counties	Race	Total	Total Deaths (Under 1 Year of Age)				Total Deaths (2 Years of Age)				Total Deaths (Under 5 Years)				Typhoid Fever	Malaria	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Dysentery
			Total	White	Colored	Indian	Total	White	Colored	Indian	Total	White	Colored	Indian									
Alleghany.....	White..	57	9	5	2	17	---	---	---	---	---	---	---	---	---	---	---	1	---	2	2	1	---
	Colored	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ashe.....	White..	158	34	8	6	52	2	---	---	---	---	---	---	---	---	---	1	---	---	2	3	---	3
	Colored	6	1	---	1	2	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---	---
Avery.....	White..	56	11	5	2	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	1
	Colored	5	---	---	---	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Buncombe.....	White..	859	93	35	13	153	4	---	---	---	---	---	---	---	---	---	---	---	---	13	7	9	5
	Colored	208	23	5	2	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3	2
	White..	133	41	7	1	49	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5	---
Cherokee.....	Indian..	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Colored	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Clay.....	White..	38	8	1	2	13	1	---	---	---	---	---	---	---	---	---	---	---	---	2	---	1	---
	Colored	2	---	---	---	1	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Graham.....	White..	21	8	---	1	9	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1
	Indian..	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Haywood.....	White..	193	59	11	5	76	---	---	---	---	---	---	---	---	---	---	---	2	---	2	3	5	2
	Colored	8	---	1	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Henderson.....	White..	170	25	8	3	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6	4	---
	Colored	30	4	---	1	5	1	---	---	---	---	---	---	---	---	---	---	---	---	---	1	2	---
	White..	101	34	6	2	46	1	---	---	---	---	---	---	---	---	---	---	---	---	1	4	1	2
Jackson.....	Indian..	11	1	1	---	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Colored	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
McDowell.....	White..	139	32	9	5	50	3	---	---	---	---	---	---	---	---	---	---	4	---	---	1	1	2
	Colored	14	2	1	---	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---
Macon.....	White..	112	22	1	2	30	1	---	---	---	---	---	---	---	---	---	---	---	---	1	4	5	---
	Colored	3	2	---	---	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Madison.....	White..	174	49	10	2	63	6	---	---	---	---	---	---	---	---	---	---	2	---	1	4	4	2
	Colored	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mitchell.....	White..	102	31	8	2	41	3	---	---	---	---	---	---	---	---	---	---	---	---	4	2	---	1
	Colored	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Polk.....	White..	47	19	---	4	23	---	---	---	---	---	---	---	---	---	---	---	---	---	2	2	2	---
	Colored	16	2	---	---	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---
Rutherford.....	White..	264	60	8	10	85	3	---	---	---	---	---	---	---	---	---	---	1	---	9	6	2	---
	Colored	62	12	3	1	16	1	---	---	---	---	---	---	---	---	---	---	---	---	1	2	---	1
Swain.....	White..	91	28	7	7	43	1	---	---	---	---	---	---	---	---	---	---	---	---	1	8	1	---
	Indian..	14	5	4	---	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Transylvania.....	White..	72	15	5	1	23	2	---	---	---	---	---	---	---	---	---	---	3	---	---	3	1	1
	Colored	5	1	---	---	1	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Watauga.....	White..	119	40	10	4	56	1	---	---	---	---	---	---	---	---	---	---	2	---	2	3	---	10
	Colored	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Yancey.....	White..	81	28	5	---	35	2	---	---	---	---	---	---	---	---	---	---	---	---	1	6	---	2
	Colored	2	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Totals.....	White..	2987	646	149	74	925	34	---	---	---	---	---	---	---	---	---	1	15	---	43	64	43	32
	Indian..	27	6	5	---	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Colored	371	47	13	5	71	4	---	---	---	---	---	---	---	---	---	---	---	---	2	3	7	3

Continued

Acute Poliomyelitis	Meningococcus Meningitis	Tuberculosis (All Forms)	Syphilis	Gonococcus Infection	Cancers (All Forms)	Pellagra	Broncho-pneumonia	Pneumonia	Diarrhea and Enteritis (Under 2 Years)	The Puerperal State	Premature Birth; Injury at Birth	Other Diseases Peculiar to Early Infancy	Suicides (All Means)	Conflagration	Burns (Conflagration Excepted)	Accidental Drowning	Railroad Accidents	Automobile Accidents	Lightning	Homicides by Firearms	Homicides by Other Means
		5			7			3	2												
		1																		1	
		9			5		3	7	6	3	5				1	1					2
		1																			
		4			1		1	3	3	1	5				1						
								3	1												
1		291	5		27	7	20	22	21	10	31	1	1		7	1	3	7		5	
		73			6	3	13	14	3	5	7				3		2	2		1	2
1		7	1		7	1	3	9	7	5	9			1						3	
		1			2		2		1	2	2										
					2			2	2			1									
						1															
		8			3	2	8	15	8	4	19			1	2	1	5	1		2	
		2						1	1												
		15	1		13	2	4	4	14	3	6			1	2	1		1			1
		5			2			1	1		1										
		5			3	2		3	3	1	10	2			2					1	
		2					2		1												
								1													
		13			4	2	2	4	12	2	6				1		2	1	1		
					2						1									1	
		7			7	1	1	8	3	1	7	1	1							2	
								1													
		17			6	1	7	11	8	4	7					2	1	1		3	
																	1				
		3			5	1	3	7	4	3	10				3						1
		4			2		3	3	4	2	8									1	
		2			1			1			2							1			
1		19			19	3	14	10	12	5	17	1	2		2	2	1	1		3	
		11	1		5	1	5		1	1	2			1							2
		3			4	1	5	7	3		7				1					1	
		2					1		3		1									1	
		4			3	1	3	3	3	3	7		2		1			1			
																	1				
		4			3		2	2	6	2	10		1								
1		4			3			2	7	5		4						1		2	
4		425	7		126	24	83	130	127	51	170	6	8	2	23	8	13	13	1	23	4
		4				1	3		4		1									1	
		95	1		16	4	18	19	9	7	13			1	3		5	2		3	4



TABLE VII—

Twenty Extreme Eastern Counties	Race	Total	Total Deaths (Under 1 Year of Age)		Total Deaths (1 Year of Age)		Total Deaths (2 Years of Age)		Total Deaths (Under 5 Years)		Typhoid Fever	Malaria	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup		Influenza	Dysentery
			White	Colored	White	Colored	White	Colored	White	Colored							White	Colored		
Beaufort.....	White ..	199	42	7	2	56	3	10	1	1	56	3	10	1	1	3	6	3	4	4
	Colored	212	49	6	1	60	4	7	1	1	60	4	7	1	3	2	2	2	1	1
Brunswick.....	White ..	91	18	4	1	27	2	2	1	1	27	2	2	1	1	2	1	1	1	1
	Colored	67	13	3	3	16	1	1	1	1	16	1	1	1	1	1	1	1	1	1
Camden.....	White ..	25	2	1	1	6	1	1	1	1	6	1	1	1	1	1	1	1	1	1
	Colored	23	3	1	2	6	1	1	1	1	6	1	1	1	1	1	1	1	1	1
Carteret.....	White ..	149	37	2	3	44	2	2	1	1	44	2	2	1	1	1	1	1	1	1
	Colored	38	9	2	1	11	1	1	1	1	11	1	1	1	1	1	1	1	1	1
Chowan.....	White ..	63	13	2	1	16	1	1	1	1	16	1	1	1	1	1	1	1	1	1
	Colored	58	13	1	1	13	1	1	1	1	13	1	1	1	1	1	1	1	1	1
Columbus.....	White ..	217	52	17	5	82	3	2	1	3	82	3	2	1	3	1	9	4	1	1
	Indian ..	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Colored	138	47	11	4	65	2	1	1	1	65	2	1	1	1	1	3	1	1	1
Craven.....	White ..	157	23	2	1	28	4	2	1	1	28	4	2	1	1	1	5	3	1	1
	Colored	280	54	5	3	67	2	9	1	1	67	2	9	1	1	1	5	3	1	1
Currituck.....	White ..	45	6	2	1	9	2	1	1	1	9	2	1	1	1	1	1	3	1	1
	Colored	42	6	2	1	10	1	1	1	1	10	1	1	1	1	1	1	3	1	1
Dare.....	White ..	42	9	1	1	10	1	1	1	1	10	1	1	1	1	1	1	1	1	1
	Colored	7	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1
Gates.....	White ..	30	3	2	1	5	1	1	1	1	5	1	1	1	1	1	1	3	1	1
	Colored	55	10	4	3	18	1	1	1	1	18	1	1	1	1	1	1	3	1	1
Hyde.....	White ..	28	3	2	1	5	3	1	1	1	5	3	1	1	1	1	1	1	1	1
	Colored	29	6	3	1	10	2	1	1	1	10	2	1	1	1	1	1	1	1	1
Jones.....	White ..	36	9	5	1	16	2	1	1	1	16	2	1	1	1	1	3	1	1	1
	Colored	39	7	2	2	11	2	1	1	1	11	2	1	1	1	1	1	1	1	1
New Hanover.....	White ..	387	90	29	10	136	3	4	1	1	136	3	4	1	2	2	1	1	1	1
	Colored	350	62	19	5	90	1	1	1	1	90	1	1	1	1	1	1	1	1	1
Onslow.....	White ..	102	28	3	3	35	4	1	1	1	35	4	1	1	1	3	1	1	1	1
	Colored	62	12	1	1	15	3	3	1	1	15	3	3	1	1	1	1	1	1	1
Pamlico.....	White ..	51	12	1	1	15	4	1	1	1	15	4	1	1	1	1	2	1	1	1
	Colored	33	6	1	1	8	1	4	1	1	8	1	4	1	1	1	1	1	1	1
Pasquotank.....	White ..	107	26	8	2	36	3	1	1	1	36	3	1	1	1	1	1	1	1	1
	Colored	146	32	3	3	43	3	3	1	1	43	3	3	1	1	1	1	1	1	1
Pender.....	White ..	71	12	2	1	15	1	1	1	1	15	1	1	1	1	1	1	2	1	1
	Colored	108	14	4	2	23	1	1	1	1	23	1	1	1	1	1	1	1	1	1
Perquimans.....	White ..	56	16	1	1	20	2	1	1	1	20	2	1	1	1	1	1	1	1	1
	Colored	67	27	1	1	29	3	2	1	1	29	3	2	1	1	1	1	1	1	1
Tyrrell.....	White ..	28	8	1	1	9	1	1	1	1	9	1	1	1	1	1	1	1	1	1
	Colored	25	9	1	2	12	1	1	1	1	12	1	1	1	1	1	1	1	1	1
Washington.....	White ..	76	19	2	1	22	1	1	1	1	22	1	1	1	3	1	1	1	1	1
	Colored	95	31	6	1	40	3	3	1	1	40	3	3	1	4	2	1	1	1	1
Totals.....	White ..	1960	428	93	31	592	18	39	1	13	592	18	39	1	11	32	10	23	1	1
	Indian ..	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Colored	1874	411	73	28	549	26	40	1	7	549	26	40	1	21	13	10	10	1	1

Continued

Acute Poliomyelitis	Meningococcus Meningitis	Tuberculosis (All Forms)	Syphilis	Gonococcus Infection	Cancers (All Forms)	Pellagra	Broncho-pneumonia	Pneumonia	Diarrhea and Enteritis (Under 2 Years)	The Puerperal State	Premature Birth; Injury at Birth	Other Diseases Peculiar to Early Infancy	Suicides (All Means)	Conflagration	Burns (Conflagration Excepted)	Accidental Drowning	Railroad Accidents	Automobile Accidents	Lightning	Homicides by Firearms	Homicides by Other Means
-----	-----	7	-----	-----	8	1	4	3	8	4	14	-----	2	-----	-----	-----	2	-----	-----	6	1
-----	-----	28	1	-----	5	2	1	3	8	3	5	-----	-----	1	1	-----	1	-----	-----	3	2
-----	-----	4	-----	-----	5	1	1	5	4	4	3	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	6	-----	-----	1	1	-----	1	3	-----	1	-----	-----	-----	-----	1	-----	-----	-----	1	-----
-----	-----	3	-----	-----	1	1	2	2	2	-----	1	1	-----	-----	-----	-----	-----	-----	1	-----	-----
-----	-----	2	-----	-----	2	-----	2	2	1	-----	-----	-----	-----	-----	-----	1	-----	-----	-----	-----	-----
-----	-----	8	-----	-----	2	2	2	8	15	-----	14	-----	1	-----	1	1	-----	1	-----	-----	-----
-----	-----	4	-----	-----	1	1	1	-----	1	-----	2	1	-----	-----	-----	-----	-----	-----	-----	1	-----
-----	-----	4	-----	-----	3	1	1	2	8	1	2	-----	1	-----	2	-----	-----	-----	-----	-----	-----
-----	-----	5	1	-----	1	1	-----	1	1	1	1	-----	-----	-----	-----	-----	-----	-----	-----	1	1
-----	-----	8	-----	-----	9	1	6	7	11	3	11	-----	-----	-----	2	-----	1	-----	-----	-----	-----
2	-----	11	1	-----	4	1	1	6	6	3	8	-----	1	-----	2	-----	-----	-----	-----	-----	-----
-----	-----	7	1	-----	10	-----	4	7	9	3	7	1	1	-----	1	2	-----	5	-----	-----	-----
-----	-----	28	2	-----	3	4	2	9	18	5	10	-----	-----	-----	3	8	-----	-----	-----	3	-----
-----	-----	3	-----	-----	-----	1	1	3	2	-----	-----	-----	-----	-----	-----	1	-----	-----	-----	-----	-----
-----	-----	1	-----	-----	1	1	1	1	2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	1	-----	-----	-----	1	-----	1	-----	-----	2	1	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	3	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	1	-----	-----	-----	-----	-----	-----
-----	-----	10	-----	-----	1	-----	-----	-----	2	2	-----	-----	-----	-----	1	-----	-----	-----	-----	-----	-----
-----	-----	5	-----	-----	-----	1	1	1	-----	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	1	-----	-----	-----	1	-----	1	2	1	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----	-----	-----	2	6	3	3	-----	-----	-----	-----	1	-----	-----	-----	-----	-----
-----	-----	2	-----	-----	-----	-----	1	2	3	2	2	-----	-----	-----	-----	-----	-----	-----	-----	-----	1
-----	-----	17	-----	-----	14	1	13	23	40	8	37	2	5	-----	7	4	2	3	-----	2	1
-----	-----	36	4	-----	16	3	8	19	24	7	21	-----	1	-----	3	6	1	-----	-----	8	3
-----	-----	3	-----	-----	7	3	7	9	2	9	-----	-----	-----	-----	-----	2	-----	-----	-----	-----	-----
-----	-----	10	-----	-----	2	-----	4	1	3	3	-----	-----	2	-----	1	1	1	-----	-----	-----	-----
-----	-----	2	-----	-----	4	-----	2	3	2	-----	4	-----	2	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	1	-----	-----	-----	-----	-----	3	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	4	-----	-----	6	1	-----	-----	14	2	4	-----	2	-----	-----	1	-----	-----	-----	1	-----
-----	-----	24	1	-----	1	-----	3	4	7	1	3	-----	1	-----	1	-----	-----	-----	-----	-----	-----
-----	-----	1	-----	-----	3	-----	2	4	4	-----	6	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	16	-----	-----	1	-----	1	4	7	5	2	-----	1	-----	1	-----	1	-----	-----	2	-----
-----	-----	6	-----	-----	-----	-----	2	3	3	1	5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	6	-----	-----	-----	-----	2	4	8	2	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	2	-----	-----	1	-----	1	1	1	1	1	1	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----	-----	-----	1	-----	-----	2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	3	-----	-----	7	-----	1	4	2	2	10	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	2	-----	-----	-----	-----	1	4	3	1	6	-----	1	-----	-----	1	-----	1	-----	1	1
-----	-----	91	1	-----	81	11	46	86	140	31	132	6	15	-----	13	12	5	9	1	9	2
2	-----	193	10	-----	38	15	21	68	96	37	67	2	7	1	13	19	3	2	-----	20	8

TABLE VIII.—DEATHS (EXCLUSIVE OF STILLBIRTHS)

Cities in the Registration Area	Race	Total	Total Deaths (Under 1 Year of Age)	Total Deaths (1 Year of Age)	Total Deaths (2 Years of Age)	Total Deaths (Under 5 Years)	Typhoid Fever	Malaria	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Dysentery
Totals.....	White..	2848	501	131	45	722	10	7	2	19	5	27	21	25	9
	Colored	2288	427	89	32	571	19	12	2	6	1	20	12	27	10
Asheville.....	White..	457	52	16	8	85	2					6	2	4	2
	Colored	146	23	2	2	30								3	2
Charlotte.....	White..	396	69	14	7	96				4	2	1	5	2	2
	Colored	299	37	14	2	58		3		2		3	2	4	4
Durham.....	White..	143	33	5	2	41								5	1
	Colored	192	40	5	3	48	5							6	1
Gastonia.....	White..	149	39	12	5	62				1	1	2	4		1
	Colored	50	4	1	1	8	1						1	1	1
Goldsboro.....	White..	68	14	2		17	1					1		2	
	Colored	132	36	3	2	41	1	3						1	1
Greensboro.....	White..	169	29	3	1	34	3							2	2
	Colored	116	20	3		23	4						1	2	
High Point.....	White..	134	22	10	4	38			1	3		2	5	3	
	Colored	49	10	6	2	18						1		1	
New Bern.....	White..	79	8		1	9	2	2					1		
	Colored	155	25	2		30		4				1	2	3	
Raleigh.....	White..	314	30	8	3	45		1		1		3			
	Colored	225	37	6	6	52	2			3		4	2		
Rocky Mount.....	White..	127	32	7	3	42				3		3	1	2	
	Colored	108	25	3		28		2				2		2	
Salisbury.....	White..	118	17	9	2	30	1	1		1		2	1	2	
	Colored	67	12	6	1	19	2					1	1	1	
Wilmington.....	White..	310	68	21	6	100		3		3		2	1	1	1
	Colored	293	55	18	5	81	1			3					
Wilson.....	White..	104	20	2	1	23	1		1					1	
	Colored	109	16	8		27	1		1			3		2	
Winston-Salem.....	White..	280	68	22	2	100				3	2	5	1	1	
	Colored	347	87	12	8	108	2		1	1	1	5	3	1	1

FROM CERTAIN CAUSES FOR CITIES, BY RACES, FOR 1921

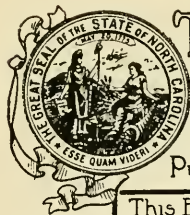
	Acute Poliomyelitis	Meningococcus Meningitis	Tuberculosis (All Forms)	Syphilis	Gonococcus Infection	Cancers (All Forms)	Pellagra	Broncho-pneumonia	Pneumonia	Diarrhea and Enteritis (Under 2 Years)	The Puerperal State	Premature Birth; Injury at Birth	Other Diseases Peculiar to Early Infancy	Suicides (All Means)	Conflagration	Burns (Conflagration Excepted)	Accidental Drowning	Railroad Accidents	Automobile Accidents	Lightning	Homicides by Firearms	Homicides by Other Means
1	1	271	9	125	34	82	105	123	52	220	6	19	1	24	10	26	32	14	3			
		340	21	78	48	60	107	113	49	154	1	3	1	19	13	9	8	39	12			
		153	3	13	3	9	11	11	7	25	1			5	2	1	3	5				
		30		6	3	10	11	3	4	7				3		2	2	1	1			
		22		19	5	12	24	14	8	21			2	3	1	6	7	1	1			
		44	1	9	5	9	14	6	6	11				1	3	2	1	5				
	1	14	1	7		4	2	12	13				2			1	1		1			
		42	2	6	8	7	6	12	4	12				1					1			
		7		5	2	6	3	4	2	21				3		3						
		6		5	2		3		1	2			1		1	1						
		8		4		2	2	3		6				2								
	1	19		4	1	1	2	6	3	21				1	1			5	1			
		5	1	14	3	3	7	1	5	8					1		6	1				
		15		6		1	10	5	5	12	1				1	1		4	1			
		10		5	2	5	4	7	7	11						2	2					
		8	1	3	1	1	3	3	1	2							1					
		3	1	7		4		2	1	2	1	1		1		1	2					
		16	2	1	3	1	6	12	3	4					2	1						
		16		11	13	8	12	6	1	16	1	3				3	3	2				
		32	3	9	8	4	6	6	5	15					3	2	1		4			
		5		7		2	3	6	2	17			2				2					
		12	2	3	1		1	8	2	12			1	1		1	1	1	4			
		2	1	6	4	3	4	7	1	3	1	1		1	2	1	3	2	1			
		9		2	1		7	3		5					1							
		12		11	1	12	21	23	8	32	2	4		6	1	2	3	2	1			
		28	4	14	3	6	18	22	6	19			1	3	1	1		8	2			
		1	1	3		1	2	5	5	10			2		1	2	3	1				
		17		2		2	8	2	3						1	1		1	3			
		13	1	13	1	11	10	22	5	35			2		2	1		2	1			
		62	6	8	12	18	12	25	6	32				1	2	1	1	2	5	3		



The image displays a collection of historical North Carolina State Board of Health Standard Certificates of Birth and Death. The forms are densely packed and overlapping, showing various examples of the official documentation. Key details visible on the forms include:

- Form 1 (Top Left):** A Standard Certificate of Birth dated May 27, 1921, for a child named John Lee, born to John Lee and Mary Lee in the town of Lenoir, North Carolina.
- Form 2 (Top Right):** A Standard Certificate of Birth dated May 27, 1921, for a child named John Lee, born to John Lee and Mary Lee in the town of Lenoir, North Carolina.
- Form 3 (Middle Left):** A Standard Certificate of Birth dated May 27, 1921, for a child named John Lee, born to John Lee and Mary Lee in the town of Lenoir, North Carolina.
- Form 4 (Middle Right):** A Standard Certificate of Birth dated May 27, 1921, for a child named John Lee, born to John Lee and Mary Lee in the town of Lenoir, North Carolina.
- Form 5 (Bottom Left):** A Standard Certificate of Birth dated May 27, 1921, for a child named John Lee, born to John Lee and Mary Lee in the town of Lenoir, North Carolina.
- Form 6 (Bottom Right):** A Standard Certificate of Birth dated May 27, 1921, for a child named John Lee, born to John Lee and Mary Lee in the town of Lenoir, North Carolina.

The forms are filled with handwritten information, including names, dates, and addresses. Some forms are partially obscured or overlapping. The text is in English and includes fields for 'FATHER', 'MOTHER', 'DATE OF BIRTH', and 'PLACE OF BIRTH'. The forms are arranged in a somewhat chaotic, overlapping manner, showing various examples of the official documentation.



# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request.

Vol. XXXVII

JULY, 1922

No. 7

## THE SECOND ANNUAL NORTH CAROLINA CONFERENCE ON TUBERCULOSIS

WILL BE HELD AT

GOLDSBORO, N. C., OCTOBER 3, 1922

FROM 9 A. M. TO 10 P. M.

UNDER AUSPICES OF THE

NORTH CAROLINA TUBERCULOSIS ASSOCIATION

**AUTHORITIES ON TUBERCULOSIS WILL TELL HOW TO CURE,  
PREVENT, AND FINALLY ELIMINATE THE GREAT  
WHITE PLAGUE FROM NORTH CAROLINA**

Make your arrangements to attend this meeting if you are  
interested in

FINDING AND TREATING TUBERCULOSIS  
THE ERECTION OF COUNTY SANATORIA  
THE NURSING OF TUBERCULOSIS  
TUBERCULOSIS IN PUBLIC HEALTH WORK  
MEDICAL TUBERCULOSIS PROBLEMS  
NUTRITION PROGRAM FOR UNDERNOURISHED CHILDREN  
THE NEGRO TUBERCULOSIS PROGRAM  
TUBERCULOSIS CHRISTMAS SEAL SALE.

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RONALD B. WILSON, Assistant to the Secretary.  
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L. B. MCBRAYER, M.D., Superintendent of the State Sanatorium for Treatment of Tuberculosis and Chief of Bureau of Tuberculosis.  
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K. E. MILLER, M.D., Director of County Health Work.  
H. E. MILLER, C.E., Chief of Bureau of Engineering and Inspection.  
F. M. REGISTER, M.D., Deputy State Registrar of Vital Statistics.  
J. S. MITCHENER, M.D., Chief of Bureau of Epidemiology.  
K. P. B. BONNER, M.D., Chief of Bureau of Maternity and Infancy.

## FREE HEALTH LITERATURE

The State Board of Health has available for distribution without charge special literature on the following subjects. Ask for any that you may be interested in.

WHOOPING-COUGH  
HOOKWORM DISEASE  
PUBLIC HEALTH LAWS  
TUBERCULOSIS LAWS  
TUBERCULOSIS  
SCARLET FEVER  
INFANTILE PARALYSIS  
CARE OF THE BABY  
FLY PLACARDS  
TYPHOID PLACARDS  
TUBERCULOSIS PLACARDS

CLEAN-UP PLACARDS  
DON'T SPIT PLACARDS  
SANITARY PRIVIES  
WATER SUPPLIES  
EYES  
FLIES  
COLDS  
TEETH  
CANCER  
PRE-NATAL CARE  
MALARIA

SMALLPOX  
ADENOIDS  
MEASLES  
GERMAN MEASLES  
TYPHOID FEVER  
DIPHTHERIA  
PELLAGRA  
CONSTIPATION  
INDIGESTION  
VENEREAL DISEASES  
CATARRH

## FOR EXPECTANT MOTHERS

The Bureau of Maternity and Infancy has prepared a series of monthly letters of advice for expectant mothers. These letters have been approved by the medical profession. They explain simply the care that should be taken during pregnancy and confinement, and have proved most helpful to a large number of women. If you want them for yourself or a friend, send name to the State Board of Health, and give approximate date of expected confinement.

## THE HEALTH BULLETIN

The Health Bulletin is sent monthly without charge to all persons in the State who care to receive it. If you have friends or neighbors who will be interested, suggest that they write the State Board of Health, asking for The Bulletin each month. When you have finished with your copy, give it to some one else, thereby increasing its usefulness.

# THE Health Bulletin

PUBLISHED BY THE NORTH CAROLINA STATE BOARD OF HEALTH

Vol. XXXVII

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## THE INVESTMENT IN HEALTH

In North Carolina twenty-five counties are now maintaining whole time health departments in co-operation with the State Board of Health. The investment being made by these counties and the State jointly in public health exceeds \$200,000 annually. What sort of dividends, if any, is this investment paying?

Such a question is natural and pertinent. In this issue of The Health Bulletin is given a summary of the work accomplished in each of twenty-four counties for the first six months of 1922 on the basis of the amount earned on the sum invested. It is the first time that an accounting has been made to the people on such a basis, and should prove of unusual interest.

In The Health Bulletin for January, 1922, appeared an explanation of the new arrangement between the counties and the State whereby a cost equivalent system was adopted. A copy of the January issue may be obtained upon request.

## CONFERENCE ON TUBERCULOSIS

The second annual North Carolina Conference on Tuberculosis will be held in Goldsboro on October 3, under the auspices of the North Carolina Tuberculosis Association. Three sessions will be held, morning, afternoon, and evening, and a most interesting program is being arranged.

Largely due to the efforts of this Association two counties, Guilford and Gaston, have voted bonds for the purpose of building county sanatoria for the care of their tuberculous citizens. A ward for the tuberculous was arranged in a hospital in Burke County. Two or more other counties are seriously considering county sanatoria.

The approaching Conference will epitomize the winning fight that is being made against the "Great White Plague." While 2,641 North Carolinians needlessly gave their lives last year because of this disease, yet this was more than a thousand less than the number who died in 1914, just seven short years ago. Today the death rate from tuberculosis is much lower in this State than for the country as a whole, and the excellent rate of North Carolina is exceeded among the Southern States only by Florida.

Yet the toll is too heavy. Tuberculosis is preventable. It is curable. The approaching Conference will aid in spreading the knowledge of prevention and cure.

## THE HEALTHIEST YEAR

According to the records of thirty-seven insurance companies, comprising figures for 27,000,000 lives, the year 1921 was the healthiest year during the history of the United States and Canada. These companies transact about eighty per cent of the life insurance business of this country, and



showed 184,860 deaths against 205,941 for the previous year.

A reduction in pneumonia and influenza cases accounted almost entirely for this favorable showing, pneumonia causing only about one half as many deaths in 1921 as in 1920. Tuberculosis was responsible for one in every nine deaths as against one in four

ten years ago. The number of suicides and homicides and the percentage of automobile accidents increased.

About twenty-eight per cent of the deaths are caused by cerebral hemorrhage, organic diseases of the heart, and Bright's disease, ailments largely of advanced life.

## COUNTY HEALTH DEPARTMENTS

### The Money Invested and the Dividends Paid

By K. E. Miller, M. D.

WHEN money is plentiful the tendency is to become careless about the use to which it is put, non-productive investments are indulged in freely. But in times of money scarcity, as the present, it is incumbent both upon the individual and the public to invest wisely so as to make every dollar yield not only a good dividend, but the greatest possible within the bounds of sound investment. Every idle dollar must get to work at a brisk and hustling pace. No loafing on the job can be tolerated. It is the active dollar that brings home the big dividend. At a time like the present, therefore, it is especially necessary to examine our investments to see if they are rendering a good and satisfactory account of themselves.

So far as the full-time county health departments to which the State Board is lending financial co-operation are concerned the public is fortunately provided with a ready means of taking invoice. Local health work in the co-operative counties in North Carolina has been placed on a basis whereby we can balance the work accomplished against the expense involved in its accomplishment. For each item

of work that the health department does a reasonable average cost value has been determined. For example, for each complete typhoid vaccination 50 cents; for each school child treated for dental defects \$2; for each person examined for hookworm disease 50 cents, and so on through a list of about 90 different items of work commonly done by full-time health departments. By means of these fixed cost values the work of a health department is easily translated into financial terms, which in each case stand for the amount that could have been spent in doing the work without getting outside the bounds of economy. For example, let us suppose that the total work of a health department for a month amounts to \$600.00 when reduced to cost values. This means that the county could have afforded to spend as much as \$600.00 to get that amount of work done. But suppose that the work actually cost the county only \$400.00. It is, therefore, plain that 50 per cent more work was secured for the county than the county had any reason to expect or demand. This fact is ordinarily expressed by saying that the earning per dollar invested was \$1.50. At this point, how-

ever, a misconception is liable to creep in. It must be emphasized that all our calculations are based on cost values alone without any reference whatsoever to the real preventive value to life and health. For instance, in a group of 1,000 people unvaccinated we may reasonably expect a certain number of typhoid cases to develop and perhaps one or more deaths. By vaccinating this group we are able to avoid the occurrence of typhoid among them. The cost of vaccination at 50 cents each is \$500.00, while the real value of the work to this group through elimination of typhoid sickness and death is at least ten times this amount. In like manner it may be shown for all other items of public health work that the real value far outweighs the cost value. When we speak of earnings on the investment, therefore, it will be understood that the terms are used to signify the measure or quantity of work performed rather than its intrinsic value.

If the foregoing remarks are clearly understood we may proceed to a study of the work performed by co-operative health departments in North Carolina during the six months period from January 1, 1922, to June 30, 1922, as set forth in the following table:

Without a detailed explanation of the significance of each item of work included in the table a full appreciation of the meaning and importance of certain items may be missed by the casual reader. Also many of the items are capable of a variety of interpretations. For the purpose of avoiding any misinterpretation, therefore, and for the purpose of clarification in general, a list of carefully considered definitions covering each item has been prepared and is in daily use as an article of reference by all of the health departments. It is un-

fortunate that space available does not permit of the publication of these definitions along with the foregoing table. However, the items of work included in the table are merely an expression of the more important public health demands met with by the health officers in active duty. A great many other demands for service, some justifiable and some not, are made upon the health officers, and in many instances the health officer feels duty-bound to perform services for which no credit is allowed. The difficulty, therefore, lies in keeping the number of items reduced to the minimum. But even so it must appear to even the casual observer that the range of services regularly performed by county health departments is surprisingly extensive.

For a study of the individual items the table tells its own story. Out of the great mass of figures information is derived for the determination of two points of paramount interest and importance:

- (1) The earning of each health department per dollar invested.

- (2) The earning of each health department as compared to the average.

One county only failed to do the minimum amount of work demanded. Let us consider for a moment what this means to the county. The State Board of Health agrees to subsidize each full-time health department to the extent of \$2,500.00 per year as a maximum. This subsidy, however, is conditioned upon the amount of work done. If the health department earns dollar for dollar on the investment, or more, the full amount of \$2,500.00 is paid to the county. But if the earning on the investment is less than a dollar for each dollar spent, the State Board of Health pays accordingly. In the case of the above men-

tioned county the earning during the first six months was 75 cents on the dollar spent. Supposing the rate remains the same at the end of the year, the county will receive from the State Board of Health  $75\frac{1}{100} \times \$2,500.00$  or \$1,875.00, which in substance means that it will cost the county \$625.00 more than if a standard of work sufficient to produce a dollar or more in cost equivalents for every dollar spent, were being done. The supreme object sought for by any system of health administration is the greatest possible quantity of efficient and effective service for the money spent. By the system here employed a county suffers from inefficiency in two distinct ways. Not only does inefficiency deprive a county of its portion of the essential fruits of health protection, but it actually costs the county more than efficient service. And since the State Board of Health pays only in accordance with services rendered, practically the entire penalty for inefficiency rests upon the county. This being so, the tabulation which is here published will be studied with particular interest by those who live in any of the counties represented.

With one exception then the work accomplished by each health department was above par, as the earning per dollar invested in every instance except one exceeded \$1. While any earning above par is good, the chief interest naturally centers about the "better" and "best," which leads to a consideration of the standing of each county with respect to the average. It will be observed that the average earning for the entire twenty-four counties was \$1.42 per dollar expended, which means that the average county did 42 per cent more work than was normally expected. But for the purpose of a more accurate estimation of the standing of each health

department with respect to its fellows its position in the scale of earnings above or below \$1.42 is the best guide. For the sake of ready survey the following list is given in the order of earning capacities:

1.	Rowan	-----	\$1.88
2.	Bladen	-----	1.79
3.	Cabarrus	-----	1.74
4.	Cumberland	-----	1.71
5.	Wake	-----	1.61
6.	Sampson	-----	1.59
7.	Halifax	-----	1.58
8.	Granville	-----	1.56
9.	Pitt	-----	1.44
10.	Forsyth	-----	1.42
11.	Robeson	-----	1.41
12.	Davidson	-----	1.40
13.	Wayne	-----	1.37
14.	Surry	-----	1.33
15.	Lenoir	-----	1.28
16.	Bertie	-----	1.23
17.	Craven	-----	1.23
18.	Columbus	-----	1.20
19.	Edgecombe	-----	1.20
20.	Mecklenburg	-----	1.15
21.	Vance	-----	1.10
22.	Northampton	-----	1.08
23.	Wilson	-----	1.08
24.	Wilkes	-----	.75

Average \$1.42

Upon glancing down the foregoing column, however, do not be too quick at drawing conclusions. Because a health department stands low in the list does not necessarily mean that the health officer and his staff are not putting forth their best efforts. Not infrequently the health officer has to carry on a more or less lone-handed struggle for the control of communicable diseases and the betterment of health conditions, with little or no back-standing on the part of those who should stand for community progress. If anyone should feel disposed to call his health department to account for not being higher in the list, let him first determine if he himself

has discharged his full duty of co-operation in the efforts which the health department has been making toward bigger accomplishments.

Whatever the cause may be, the fact remains that there is a rather wide difference in the earning capacities of the various health departments. The dividends, if viewed separately, are, for the most part, such as to bring great pride and satisfaction to every county that has invested in health work. Fortunately there is no statutory limitation upon the dividends that may be earned by investments of this kind. None of the results are so good as to preclude the possibility of their being better. In other words it is permissible to expect

and demand the money invested in each health project to be lashed and spurred to deliver up its last ounce of energy in producing even bigger dividends. For those counties that have not yet invested in full-time health work, the work that is being done by those counties now engaged in this enterprise should be sufficient to interest any board of commissioners in a similar investment upon which the prospect for dividends is perhaps unparalleled by any other expenditure the county might make. No county has any money to waste, but likewise none can afford to overlook the most productive investment, especially when the ultimate dividends are human life, health, and efficiency.



## ITEMS OF WORK AND EARNINGS PER COUNTY

ITEMS OF WORK	Totals	Bertie	Bladen	Cabarrus	Columbus	Craven	Cumberland	Davidson	Edgecombe	Forsyth	Granville	Halifax
Quarantine by mail.....	\$ 982.00	\$ 39.50	\$ 3.50	\$ 67.50	\$ 7.00	\$ 38.50	\$ 22.00	\$ 52.50	\$ 23.50	\$ 17.00	\$ 5.00	\$ 28.00
Quarantine by visit.....	5,430.00	28.50	115.50	402.00	76.50	198.00	265.50	543.00	325.50	109.50	633.00	163.50
Visit to and instruction of schools.....	1,292.00	10.00	18.00	2.00	26.00	30.00	226.00	40.00	6.00	6.00	110.00	42.00
Instruction of schools thru teachers.....	575.00	4.00	53.00	230.00	32.00	9.00	2.00	16.00			4.00	4.00
Epidemiological investigation.....	969.80	3.00	1.50	25.50		30.00	37.50	15.00	58.50	66.00	67.50	2.80
Vaccination, typhoid, complete.....	5,580.82	47.50		43.50		465.50	356.00	80.50	61.50	230.00	221.00	740.50
Vaccination, smallpox.....	2,811.25	103.25		868.00	61.00	93.00	18.75	22.50	120.50	404.75	36.00	63.00
Toxin-Antitoxin, complete.....	1,837.75	77.50	134.50	.75	1.50	138.00		41.00	1.50	157.50	19.50	161.25
Vaccination, pertussis, complete.....	246.00					10.00						
VENEREAL DISEASE CONTROL:												
Cases reported.....	325.00	9.00	2.00	17.75	5.25	8.25	29.25	14.00	13.00	2.00	5.50	11.50
Cases returned for treatment.....	265.00						9.00		77.50		1.50	6.00
Treatments, indigent cases.....	9,875.25	88.00	60.00	8.00	21.00	28.00	678.00	6.00	242.00		382.00	293.25
V. D. prescription inspection.....	46.00											37.00
TUBERCULOSIS CONTROL:												
Cases, registered.....	134.00	1.75	1.25	17.50		2.50	1.75	12.75	1.25	8.00	1.25	1.25
Tuberculosis homes visited and instructed.....												
Organization, clinic, number examined.....	1,183.00	1.00	2.00	115.00	12.00	10.00	39.00	63.00	115.00	39.00	11.00	
INFANT AND MATERNAL HYGIENE:	1,247.00		456.00	301.00	91.00			158.00	2.00	2.00		
Parental cases registered.....	326.75			40.50		1.50	17.25	8.50	6.50	20.50	4.75	12.75
Babies registered.....	633.49			120.00		1.50	27.75	35.50	9.25	91.75	1.50	
Home conferences, mothers.....	3,936.00		2.00	187.00		1.00	677.00	75.00	417.00	486.00	30.00	
Office or individual conferences, mothers.....	186.00	1.25	.25	1.75			16.50	24.75	2.00		.50	
Group conferences, mothers, number present.....	225.25	11.25					7.00	36.00				
Women completing standard course.....	201.00											
Midwives completing 6 hour course.....	720.00							17.50	150.00			150.00
Children certified, Little Mothers' League.....	526.00			21.00				33.00				

## SCHOOL HYGIENE:

Tonsil and Adenoid operations.....	5,080.00	115.00	---	280.00	35.00	45.00	40.00	130.00	---	35.00	85.00	170.00
Circumcision.....	8.00	---	---	---	---	---	---	---	---	---	---	2.00
Children treated, dental defects.....	10,424.25	1452.25	---	413.75	---	2.50	423.25	1,461.75	---	497.50	172.50	542.75
Refractive errors corrected.....	497.00	---	---	57.00	---	3.00	12.00	10.00	---	6.00	36.00	---
Orthopedic corrections.....	155.00	---	---	10.00	---	---	---	10.00	---	5.00	---	---
Nutritional correction (crusaders only).....	21.00	---	---	---	---	---	---	4.00	---	---	---	---
Pages modern health crusade.....	1,821.80	---	---	42.00	---	---	---	368.00	---	---	---	---
Examinations, school children, ages 2 to 6.....	---	---	---	---	---	---	---	---	---	---	---	---
Examinations, primary.....	14,033.70	346.40	858.50	532.75	596.25	334.25	300.80	592.25	163.25	923.25	600.50	468.25
Examinations, final.....	6,557.00	90.00	488.50	257.00	354.50	254.50	193.00	156.50	50.00	559.50	286.50	---
Excluded from school, account of scabies.....	78.50	---	---	9.00	1.25	3.00	4.25	3.50	---	9.50	.50	---
Excluded from school, account pediculosis.....	83.00	---	---	40.50	---	.50	8.75	3.25	2.50	1.50	---	6.25
VISIT:												
Jail and hospital.....	---	---	---	---	---	---	---	---	---	---	---	---
Convict camp.....	1,323.00	40.50	88.50	61.50	27.00	171.00	178.50	160.50	21.00	21.00	3.00	31.50
County Home.....	589.00	---	---	27.00	49.50	39.00	6.00	21.00	34.50	1.50	52.50	19.00
Hookworm treatment.....	1,013.50	60.00	6.00	135.00	58.50	100.50	139.50	18.00	19.50	9.00	24.00	16.50
Consultation, professional.....	292.00	---	197.75	---	19.25	7.75	---	1.00	---	---	---	1.00
Consultation, professional.....	303.50	3.00	25.50	13.50	3.00	---	16.50	13.50	76.50	---	3.00	---
EXAMINATIONS, SPECIAL:												
Marriage.....	---	---	---	---	---	---	---	---	---	---	---	---
Teachers.....	1,509.00	48.00	33.00	30.00	86.00	42.00	55.00	20.00	68.00	39.00	6.00	31.00
Child for industry.....	209.00	9.00	16.00	3.00	---	1.00	6.00	3.00	16.00	43.00	1.00	5.00
Food handlers.....	523.50	---	---	233.50	---	3.00	24.50	71.50	32.50	9.00	---	15.00
Examination by court order.....	199.00	---	---	1.00	---	5.00	48.00	---	5.00	---	---	37.00
Admission to institution.....	116.00	2.00	---	2.00	---	40.00	---	14.00	---	10.00	2.00	---
For lunacy.....	194.00	---	---	7.50	1.50	4.50	---	33.00	9.00	6.00	1.50	6.00
Postmortem.....	315.00	8.00	24.00	28.00	6.00	8.00	---	16.00	12.00	44.00	22.00	8.00
Coroner's inquest.....	80.00	5.00	---	5.00	---	5.00	---	---	---	---	5.00	---
Coroner's inquest.....	68.00	---	---	---	---	---	28.00	10.00	---	---	---	---
EXAMINATIONS, LIFE EXTENSION:												
By health officer.....	2,064.00	870.00	96.00	---	16.00	---	---	148.00	---	---	22.00	28.00
In dispensary.....	291.00	---	---	132.00	---	---	40.00	119.00	---	---	---	---
Widal test.....	351.00	---	---	---	---	.50	---	---	---	---	---	---
Throat culture.....	117.50	---	---	9.00	---	---	118.00	---	4.00	---	---	---
Throat swab.....	751.50	7.00	---	---	---	---	1.00	.50	.50	.50	7.00	3.00
Feces examination for parasites.....	90.00	---	---	---	605.50	---	8.00	.50	4.00	.50	1.00	---
Sputum examination for tuberculosis.....	168.00	56.00	---	1.00	---	---	34.00	---	12.00	1.00	---	---
Blood, for malaria.....	---	---	---	1.00	---	---	45.00	6.00	6.00	---	---	---

## ITEMS OF WORK AND EARNINGS PER COUNTY (Continued)

ITEMS OF WORK	TOTALS	Bertie	Bladen	Cabarrus	Columbus	Craven	Cumberland	Davidson	Edgecombe	Forsyth	Granville	Halifax
Milk, analysis.....	\$ 1,948.00	\$	\$	\$	\$	\$	\$ 58.00	\$	\$	\$	\$	\$
Babcock test alone.....	106.10								50.50			
Water analysis (public supply).....	485.00		13.00			16.00	10.00				1.00	5.00
Urine analysis.....	820.75	224.00	33.00	4.00		14.00	235.00	10.00	4.00			7.00
Albumen test, prenatal cases.....	14.35					4.90			1.75			
Pus, for gonococci.....	265.50	39.00			7.50	1.00	189.00		2.00			
Specimens sent to State Laboratory.....	2,230.00	121.50	11.50	32.00		128.00	68.50	47.50	80.00	10.50	21.00	207.50
EXCRETA DISPOSAL:												
Urban privies licensed.....	3,756.50		1.50				520.50		559.00	43.00		
Urban privies, maintenance, repair.....	2,202.50						60.00		255.50	138.00		
Sewer connections.....	3,602.50	255.00		150.00			77.50		67.50	162.50		2.50
Rural privies constructed.....	1,310.00		105.00				30.00		185.00	315.00		
PRIVATE WATER SUPPLIES:												
Protected against surface pollution.....	425.00							5.00		10.00	5.00	
ABATEMENT OF NUISANCES:												
Minor.....	1,489.50	12.00		1.00		271.00	23.00		6.00	21.00	1.50	.50
Major, hours spent.....	365.50	10.00		3.00		1.00	1.00	11.00	6.00	3.00		
INSPECTIONS:												
Dairy.....	666.00					28.00	173.00		6.00			
Abattoir.....	91.50						9.00					
Hotel, restaurant, market.....	2,772.00					792.50	257.50		178.00			27.00
EXAMINATIONS AND TESTS OF ANIMALS:												
Ante-mortem, when temperatures are taken.....	309.50		.25							1.50		
Post mortem, viscera attached.....	17,746.30			750.60			2,881.40	3,030.00		5,545.50		
Cows tuberculin tested.....												
CONFERENCES, HEALTH OFFICER:												
Office.....	626.00			69.00	9.50	68.50	9.50	12.50	44.00		16.00	4.50

Official (group).....	249.00	4.50	21.00	13.50	4.50	-----	3.00	19.50	13.50	3.00	3.00
CONVICTIONS:											
Violations of Health Laws.....	589.00				80.00	10.00		60.00		15.00	
ABSENCE FROM DUTY, HEALTH OFFICER, DAYS:											
Annual leave.....											
Sickness.....											
Duty outside of county.....											
MILEAGE ( <i>Official Business</i> ):											
Car miles.....	14,468.57	179.50	590.50	480.80	515.50	879.60	486.60	966.27	668.00	442.80	569.80
Health officer, miles.....	3,997.04	89.75	295.25	242.40	192.15	105.25	138.45	171.64	134.65	205.40	284.90
Nurse, miles.....	1,200.67				3.70	90.85	70.58	110.41	50.41	8.00	
Sanitary inspector, miles.....	586.58				29.09	76.15		42.39	58.73		
Lactic Acid milk dispensed.....	201.00										
Mercurial inoculations.....	870.00										
Tuberculosis examinations.....	6.00										
Examination of prisoners.....	46.00										
Total cost equivalents produced.....	\$151,172.38	\$2,999.65	\$5,184.00	\$2,986.10	\$4,284.50	\$9,520.15	\$8,466.88	\$5,017.21	\$11,022.54	\$3,586.70	\$4,218.75
Total expenditures.....	\$106,374.01	\$2,435.88	\$2,965.50	\$2,483.81	\$3,404.54	\$5,865.81	\$6,014.98	\$4,163.69	\$7,725.64	\$2,288.12	\$2,656.91
Earnings per dollar invested.....	1.42	1.23	1.74	1.74	1.20	1.23	1.40	1.20	1.42	1.56	1.58



## ITEMS OF WORK AND EARNINGS PER COUNTY (Continued)

ITEMS OF WORK	Lenoir	Mecklenburg	Northampton	Pitt	Robeson	Rowan	Sampson	Surry	Vance	Wake	Wayne	Wilkes	Wilson
Quarantine by mail.....	\$ 34.00	\$ 11.50	\$ 11.00	\$ 256.50	\$ 81.00	\$ 45.50	\$ 55.50	\$ 48.00	\$ 15.00	\$ 34.50	\$ 24.50	\$ 20.00	\$ 41.00
Quarantine by visit.....	228.00	40.50	10.50	105.00	280.50	208.50	118.50	25.50	384.00	825.00	88.50	31.50	163.50
Visit to and instruction of schools.....	4.00	20.00	14.00	124.00	12.00	332.00	50.00	12.00	56.00	60.00	2.00	32.00	58.00
Instruction of schools thru teachers.....		10.00	6.00	7.00	27.00	148.00		3.00	12.00	7.00		11.00	
Epidemiological investigation.....	13.50	58.50		99.00	25.50	252.00	1.50	13.50	17.50	172.50	9.00		
Vaccination, typhoid, complete.....	31.50	1.00	403.82	719.00	184.00	169.50	203.50	871.50	143.00	7.50	233.50	236.00	135.00
Vaccination, smallpox.....	48.00	17.50	8.25	156.00	273.00	37.25	3.25	1.00	34.25	90.25	27.50		321.25
Toxin-Antitoxin, complete.....	4.50		9.75	185.25	94.50	2.25	28.50	371.25	228.00	1.50	101.25	130.50	
Vaccination, pertussis, complete.....	15.50			44.50		1.00	11.50	17.50	103.00	.50			
VENEREAL DISEASE CONTROL:													
Cases reported.....	29.75	.75	.75	14.25	18.50	15.75	12.25	2.25	19.75	20.00	37.75	1.50	34.25
Cases returned for treatment.....		7.50		130.50	9.00	4.50	1.50	9.00		4.50	4.50		
Treatments, indigent cases.....	2,442.00	248.00	82.00	472.00	776.00	16.00	366.00	16.00	366.00	1,984.00	1,298.00		
V. D. prescription inspection.....		2.00					3.00				4.00		
TUBERCULOSIS CONTROL:													
Cases, registered.....		1.75	1.75		1.00	3.25	1.00	1.00	56.25	3.75	10.00		5.00
Tuberculosis homes visited and in- structed.....		41.00	1.00		5.00	211.00	2.00	61.00	62.00	179.00	106.00	7.00	108.00
Organization, clinic, number exam- ined.....	30.00	17.00					1.00				129.00		57.00
INFANT AND MATERNAL HYGIENE:													
Parental cases registered.....	20.50	8.50			24.75	16.00	2.50	49.00	1.25	20.25	70.25		1.50
Babies registered.....	36.75	42.74			44.00	84.50	8.75	9.75		18.25	92.50		9.00
Home conferences, mothers.....	92.00	323.00				419.00	13.00	372.00	1.00	548.00	138.00		192.00
Office or individual conferences, mothers.....		2.50				84.00	15.00	1.75	9.50	7.25	8.75		10.75
Group conferences, mothers, number present.....		23.25						77.75	2.75	10.00	56.75		

[illegible]

## ITEMS OF WORK AND EARNINGS PER COUNTY (Continued)

ITEMS OF WORK	Lenoir	Mecklenburg	Northampton	Pitt	Robeson	Rowan	Sampson	Surry	Vance	Wake	Wayne	Wilkes	Wilson
In dispensary		6.00							1.00				
Widal test		45.00								184.00			
Throat culture		7.00		6.50						92.00			
Feces examination for parasites		4.50	.50	23.00	22.00	5.00	17.00		42.00	1.50	1.50	.50	8.00
Sputum examination for tuberculosis		10.00				7.00	3.00	1.00	1.00	13.00		1.00	6.00
Blood, for malaria		4.00	4.00	25.00			17.00		2.00	3.00	1.00		4.00
Milk, analysis		124.00							4.00	1,738.00			24.00
Babcock test alone		.50							9.00	33.50			12.60
Water analysis (public supply)		28.00		3.00		11.00		2.00	10.00	387.00			10.00
Urine analysis	12.00	25.00	9.00	14.00	4.00	45.75	145.00	1.00		22.00	2.00		1.75
Albumen test, prenatal cases		2.10				1.75	2.10						3.00
Pus, for gonococci		5.00					9.00			6.00	4.00		111.50
Specimens sent to State Laboratory	275.50	75.00	136.50	166.00	211.50	11.00	47.00	5.00	28.50	59.00	324.50	.50	
EXCRETA DISPOSAL:													
Urban privies licensed	88.00					692.00	391.50		558.50	617.00	24.00		261.50
Urban privies, maintenance, repair	86.50	19.50				106.50			955.50	506.00	22.00		59.00
Sewer connections	65.00		7.50		25.00	300.00			5.00	1,802.50	527.50	2.50	152.50
Rural privies constructed	120.00	65.00	20.00	15.00	25.00			35.00	250.00	25.00	40.00		80.00
PRIVATE WATER SUPPLIES:													
Protested against surface pollution		10.00						10.00	230.00	9.00			65.00
ABATEMENT OF NUISANCES:													
Minor	9.50	.50				667.50		1.50	195.90	209.50	18.00		51.50
Major, hours spent		6.50	4.00			21.00		7.00	136.00		1.00	10.00	145.00
INSPECTIONS:													
Dairy	6.00	14.00	16.00			4.00		2.00	8.00	330.00	78.00		3.00
Alattoi									4.00	36.00	38.50		2.00
Hotel, restaurant, market	115.00			136.50	1.50	8.00	3.00	6.50	34.00	536.00	26.50		620.00





## THE IMPORTANCE OF PROPER NUTRITION IN CHILDREN AND HOW TO SECURE IT

By L. B. McBrayer, M. D.

THE advantage in appearance of a well nourished boy or girl, with ruddy cheeks and bubbling life, over the scrawny, sickly, undernourished child admits of no debate. For too many years we have taken it for granted that certain children were predestined by heredity to be "skinny" or fat, when as a matter of fact the controlling factors in weight, in a normally healthy person, are food, rest and exercise. It is obviously impossible for a growing child to maintain the proper weight for his age and height if he is handicapped by physical defects or disease, and any program looking to the elimination of malnutrition in children will fall short of complete success unless the child is given a chance to gain by removing the impediments to his doing so.

There are, however, thousands of children in North Carolina who are below their normal or standard weight who have no physical handicap, and it is a relatively easy matter to bring these children up to the proper state of nutrition. If we stop for a minute to consider the enormous benefit to be derived in later life as a result of attention to these things during childhood, the price would be cheap even though it cost a thousandfold financially and in physical effort.

During recent years the attention of those engaged in tuberculosis work has turned more and more to the importance of avoiding an infection in childhood by teaching the children health habits that will make the body resistant to infectious diseases and especially tuberculosis. We are not quoting any single authority on tuber-

culosis, but the consensus of opinion of many, when we say that the complete elimination of tuberculosis from the country will not be accomplished by drugs and medicines or by treatment of those infected but only when we go back to the root of the matter in a thorough manner and equip the children with the whole armor to fight tuberculosis, which is a body that has been made resistant to disease by sane and intelligent training.

North Carolina is interested in raising strong men and beautiful women. Health is the biggest factor to this end.

North Carolina is interested in saving the millions of dollars that are lost every year as a result of tuberculosis and other preventable diseases. This can be done but it is a sizable job and requires the support of every physician, parent, school teacher and citizen in the State.

The State Board of Health through its Bureau of Maternity and Infant Hygiene, in co-operation with the North Carolina Tuberculosis Association, has undertaken a campaign against malnutrition in the schools of North Carolina. For this purpose there has been organized the Nutrition Crusade. The supplies needed for conducting the Nutrition Crusade are few and may be obtained from the North Carolina Tuberculosis Association, Sanatorium, N. C., at a cost of one cent for each pupil. They consist of one Nutrition Chore Record Folder for each pupil and one Wall Chart for each school room. The Association has arranged to give an award to every underweight child in

North Carolina who reaches his or her standard weight, provided the Chore Record Folders are properly signed and mailed to Dr. L. B. McBrayer, Sanatorium, N. C.

The first step in conducting the Nutrition Crusade is to weigh and measure all children in the school to determine the underweights. Scales may be ordered through the North Carolina Tuberculosis Association at wholesale cost which is \$25.00, F. O. B., Chicago.

On the Nutrition Folder is a chart which gives the standard weight for boys and girls according to age and height. Each child when weighed should wear ordinary clothing, but remove shoes, coat and sweater. As each child is weighed reference should be made to the standard weight table and if the child is found to be 7 per cent or more underweight his name should be entered on the large Wall Chart and his actual and standard weight entered opposite. When all the names of children who are underweight have been entered the Chart should be hung in the school room. As the children reach their normal weight their names should be removed from the Chart or a star placed opposite to show that they have graduated from the Nutrition Class.

It has been found that the five chief causes of malnutrition in the order of their importance are: Physical defects and disease; lack of home control; overfatigue; improper diet; faulty health habits. It will therefore be the aim of the Crusade to remove these causes in so far as possible.

It will not be feasible to give every child the thorough physical examination that will be necessary in some cases. A large number of children will reach their standard weight by a strict and conscientious performance of

the chores as listed on the Nutrition Folder. This will be sufficient evidence that the child had no physical defects or diseases that were causing him to be underweight and that he only needed intelligent supervision to keep him up to par.

The children who persistently show no gain in weight and remain below their standard should be referred to a competent physician for a careful and thorough physical examination. Immediate treatment should be arranged for in accordance with the diagnosis.

Considerable work in Nutrition Clinics has already been done in various parts of the country and the results are most gratifying. Commenting on the nutrition work in Jefferson School in Washington, Dr. Harvey W. Wiley has the following to say in the August issue of *Good Housekeeping*:

"The chief purpose of these nutrition classes is to give milk at the morning recess. In order that milk may be properly supplemented, graham biscuits are also served with it. Each pupil receives a half pint of milk and two graham biscuits. These are not given to the children, they are required to pay the retail price of the milk, and two graham biscuits are served for one cent. The children are urged to use their pennies for this purpose, rather than to spend them for cheap candies, pop, and other injurious foods and drinks. The lunches are served under proper supervision and the children are instructed to drink the milk slowly and to chew the graham biscuits thoroughly. Remarkable improvement in their physical condition has been shown by the children who have persisted for a sufficient length of time in this health-giving diet.

"I desire to emphasize the fact that ordinary biscuits made of white flour are not recommended nor served at

these luncheons. This is a tribute to the success of the propaganda in favor of substituting bread and biscuits made of the whole-ground, unbolted cereals for the common and, until lately, solely used products made from white flour. No small part of the benefit derived from these luncheons is due to the fact that the milk is combined with a wholesome cereal product.

"Not only has the use of the milk morning lunch improved the health of the pupil, but it also has improved his posture. In one of the schools an experiment has been made illustrating this feature. A class of 37 pupils started taking one-half pint of milk and two graham biscuits in January. The posture test made on February 23d, showed a rating of 55.8 per cent. On March 27th another rating was made which increased the rating to 64.7 per cent. On May 1st the third rating showed 77.7 per cent. This rapid improvement is attributed to the improvement in the tone and strength of the muscles, brought about by improved nutrition. The children in this case were really too weak to stand up straight. Not only is the muscle tone improved, but the power of concentration and attention to their studies in school has also been improved.

"In order to know what has been accomplished in other localities, I have asked competent authorities what has been done in the way of improvement of nutrition in schools, and especially in the way of physical development of the child through appropriate exercise.

"I learned on inquiry from the Board of Education in Philadelphia that experiments similar to those in Washington have been organized in that city. Children who are found to be below weight are put on a special

daily regimen containing milk. The parents of these children are also called together frequently to get them interested in the work and to collaborate with the school authorities at their homes. The children who are found to have incipient tuberculosis are placed in separate schools. Those parents who are able to pay purchase the milk they use. Those whose parents are not able to pay are given their milk free. This is so arranged, however, that among the children it is not known who pays and who does not. The milk service in the schools has become very popular and has been extended to all the children who care to participate in it, and whose parents are willing to pay for the milk.

"All improvement made by the children in the Nutrition Classes should not be charged to the milk alone. There are open-air classes, school lunches, and systematic weighing and measuring, and attempts are made to induce parents to continue the health instruction at home. It is not an idle, impracticable dream, for this great, rich country of ours, to bring the children up to standard. There is not a community that could not afford to give its future citizens a glass of milk and a cracker or two each day in school, supplementing these with the proper physical exercise and supervision. All we need is an awakening to the need.

"Those in charge of the campaign against tuberculosis are gratified at the success which has already been attained. The death rate per thousand has been cut in two from that which obtained twenty years ago and it is being more strongly emphasized that in fighting tuberculosis the greatest success must be looked for in beginning the campaign early; in other words with our children. In fact, child life is quite non-resistant to

the activities of the tubercle bacillus which produces the disease. Tuberculosis may not develop to the extent of producing illness and death for many years; hence the importance of creating a bodily resistance which will restrict its growth. This is now regarded of extreme importance in the tuberculosis campaign. It is for this reason that the National and State Tuberculosis Associations have turned

their attention of late years particularly to the schoolroom.

"The belief is now fairly implanted that through our children, and the proper care and nutrition thereof, the greatest inroads upon the toll that tuberculosis has levied upon our people will be made. What is true of tuberculosis is also true of all other diseases favored by low resistance."

---

(NAME OF BOY OR GIRL)

---

### CHORES

1. I was weighed this week on the day checked (x).
  2. Besides a nourishing breakfast and the noon and evening meals, I ate morning and afternoon lunches, as directed.
  3. I ate only wholesome food to-day, including at least a pint of milk, vegetables and fruit, as directed; and tried always to eat and drink slowly.
  4. I drank four glasses of water, some before each meal, and drank no tea, coffee nor any injurious drinks.
  5. I went to toilet at my regular time.
  6. I was in bed last night ten or more hours, as directed, windows open.
  7. I rested, lying down more than twenty minutes, both this morning and this afternoon, as directed.
  8. I played in the fresh air to-day, exercising for the time and in the way directed.
  9. I washed my hands before each meal to-day.
  10. I brushed my teeth thoroughly after breakfast and after the evening meal.
  10. I took a full bath on each day of the week that is checked (x).
- Total number of chores done each week-----

### STATEMENTS TO BE FILLED IN BY YOUR TEACHER AND SHOWN TO YOUR PARENTS

(a) The average weight for your height and age is 85 lbs. (b) Your weight was 79 lbs. on Oct. 3, 1922, showing that you were 6 lbs. or 7% under average weight. (c) The increase in weight expected of a person of your age and height who is underweight is more than 1¼ lbs. for ten weeks.—(See Table C.)

Bring this record from home on the day when you are to be weighed each week, in order to have your weight-line drawn.

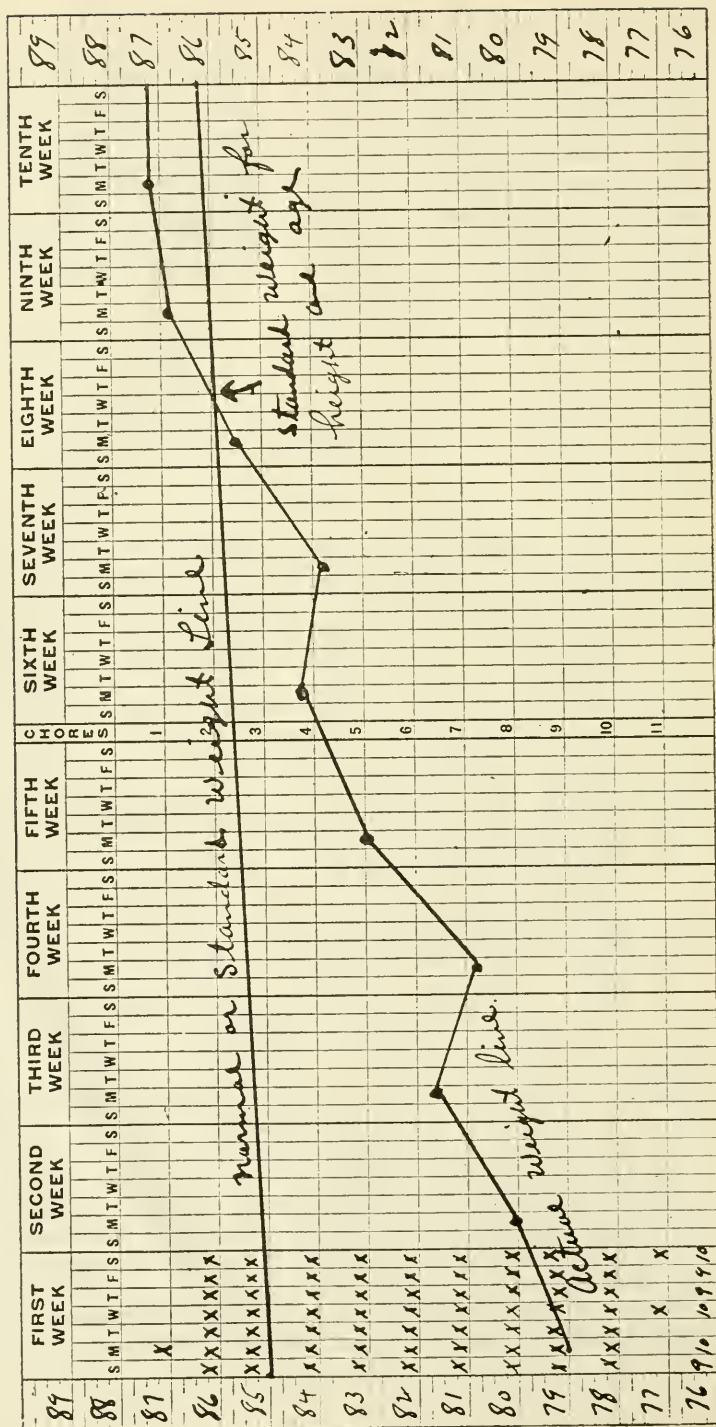


## MODERN HEALTH CRUSADE

## Record of Health Chores and Chart for Weight Lines

Age 11 Height 5'8"Date Oct 3, 1924 To Dec. 10,192 2  
W\*

R



## THE IMPORTANCE OF BREAST FEEDING

By K. P. B. Bonner, M. D.

THE far-reaching influence of this question upon the life and health of infants and children is unfortunately too little appreciated in this day and time. Failure to give the subject thoughtful consideration is responsible for this lack of appreciation. The nourishment the baby receives directly touches the physical welfare of the individual—either for good or evil.

There can be no question that human milk is the ideal food for the baby and that any substitute only approximates the ideal. The various substitutes prove satisfactory only in proportion as they approach the constituency of the ideal—mother's milk. There are a number of unanswerable arguments which demonstrate the necessity of the baby being given its mother's milk. The chief of these are:

1. The original plan of Providence;
2. Lactation is the only really useful function of the mammary glands;
3. The immediate secretion of milk following childbirth;
4. The constituents of human milk are exactly proportioned for growth and development;
5. The baby thrives better on the milk of its own mother than on other human milk;
6. No substitute can be devised to replace the milk of the mother;
7. It is the most convenient method of feeding.

The custom of putting the baby on the bottle and taking it from the breast early after birth is becoming all too prevalent in these modern times. Dr. Henry Dietrich of Los

Angeles read a most interesting and valuable analysis of 1,000 cases, investigated with this point in mind, before the recent meeting of the American Medical Association. Some significant facts were brought out in this study. He found that 9 per cent of the babies were taken from the breast during the first week after birth; 37 per cent of the total were not nursing their mothers after 3 months; and only 40 per cent were fed from the breast after eight months. Thus it will be seen that 60 per cent of these babies were weaned from birth to eight months of age. Enquiry was made into the cause for weaning 337 of 371 weaned under three months, and fifty different reasons were assigned, of which only nine might be considered really valid. Only 64 babies were affected by the reasonable causes and of these 35 come in the doubtful class that would be entirely dependent upon circumstances to justify such a serious step.

Since it is generally conceded that the baby should have the benefit of sustenance supplied by its mother until it is twelve months old, it is very obvious that the little ones are not getting their rightful heritage; not getting a "square deal," if you please. Such practices are certain to be reflected in the future citizenship and will inevitably result in a race lacking in physical stamina. To a very large extent this condition is based upon a misconception, in that the mother who unnecessarily weans her baby usually does so under the impression that it will thrive just as well or better on the new diet. It is very regrettable that such a false idea,

having no foundation in fact, should be gradually gaining ground in recent years. In these times when the very manner in which things are conducted calls for the most perfectly balanced physical and nervous systems, mankind at the very outset of its existence should be permitted to develop under the natural conditions that were designed by the Almighty in the creation of the world and all contained therein. The human family in its early stages is little more than an animal. Its special senses, mental faculties and finer mental processes are wholly undeveloped; those traits that differentiate the man from the beast. At this period of life the physical side predominates. On that account the best index to the progress of the baby is body weight. Body weight being a true index to progress, it naturally follows that to secure the most substantial and steady increase it must be supplied with the diet that can be digested and assimilated most easily; its own mother's milk. While it is true, as stated above, that the physical side is in the ascendancy in the first few years of life, it is equally true that the individual is handicapped later in life, in the development of the finer mental faculties, who has not had the advantages of normal growth in the early days of life. Thus we can see how far-reaching these effects may be. It may mean the difference between success and failure in after life—who knows?

Let us now look at the other side of the picture and investigate the effects lack of breast feeding have upon the baby. These may be discussed under two general headings; the baby lives but is handicapped physically and those who are unable to survive the unnatural character of its diet.

Dr. Ada E. Schweitzer, of the Indiana State Board of Health, has re-

cently made a study of a considerable number of children with a view of determining the influence of the effect of breast and bottle-feeding upon the child. The results of this study have been most significant. It might be said that they are astounding. In this group was 5,336 children ranging in age from eight weeks to six years of age. Fourteen per cent, or 784, were subnormal. Of this subnormal group, 65 per cent had been bottle-fed, 24 per cent had been fed by bottle and breast, and only 11 per cent had been breast fed exclusively in early life. Could any findings be more convincing as to the vital importance of breast-feeding? A further significant fact in connection with these studies was that babies who had been fed proprietary preparations furnished the highest percentage of subnormality.

The late Dr. Jacobi, one of America's most distinguished physicians, stated on one occasion that a most appropriate emblem was carried on the package of one of the artificial baby foods, the picture of an angel; because babies fed in this manner would soon be angels. This is a very strong statement and at the same time a severe arraignment, yet it expresses somewhat the actual conditions. Dr. L. Emmett Holt has been credited with the statement that one bottle fed baby out of four lived as compared with figures reversed for breast fed babies. Taking these figures as approximately correct, it appears that the breast fed baby has three times the chance to live. The bottle-fed baby contributes generously to swell the mortality statistics of our State.

In conclusion, there is no question but that much of the failure to nurse babies from the breast of the mothers is due to a lack of appreciation of the

vital importance of such sustenance to the baby. It cannot be said that this condition has come about as a result of the indifference of the mother to her offspring. No relationship is closer, no love and affection is more uniform, no interest is more keen than that of a mother for her baby. It is therefore very evident that this condition has come about as a result of lack of proper information, thoughtlessness, and at most, carelessness. Whatever causes have contributed to bring this unnatural state, the purpose

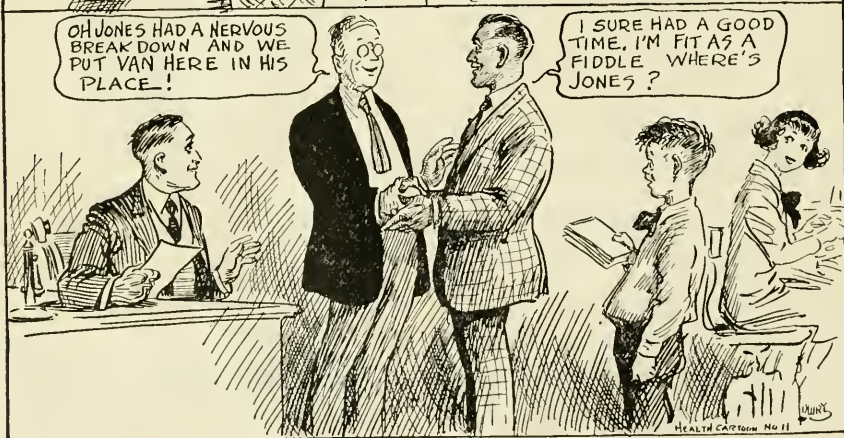
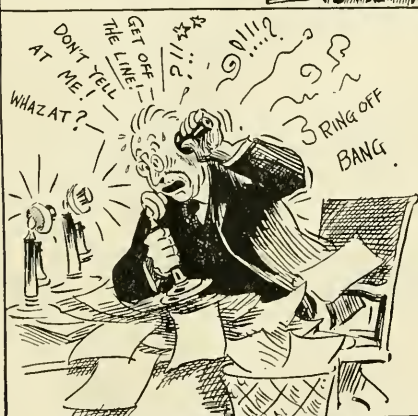
of this article is to sound a note of warning. Let the mothers of the State pause and face squarely their duty and responsibility to what is the dearest on earth to them. Much has been said in the past about the importance of the mother nursing her baby until the subject is well nigh exhausted. Our attention should now be centered upon the essential importance of the baby nursing the mother. If the baby nurses the mother properly, other attentions automatically adjust themselves.

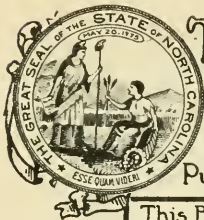
## DIPHTHERIA

The deadliest foe of children can be cured without fail if antitoxin is administered in time. Do not trifle with sore throats but have your physician make an examination. Better still, you can render your child safe from diphtheria by having your physician give three immunizing doses of toxin-antitoxin.

**IT IS BETTER TO BE SAFE THAN SORRY**







# The Health Bulletin

Published by THE NORTH CAROLINA STATE BOARD OF HEALTH

This Bulletin will be sent free to any citizen of the State upon request.

Entered as second-class matter at Postoffice at Raleigh, N. C., under Act of July 16, 1894.

Published monthly at the office of the Secretary of the Board, Raleigh, N. C.

Vol. XXXVII

DECEMBER, 1922

No. 12

MAR 12 1923



# TUBERCULOSIS

CAN BE PREVENTED  
CAN BE CURED

IT COSTS LOTS OF MONEY  
TO DO IT

BUT IT COSTS MORE  
MONEY NOT TO

---

ARE YOU WILLING

?

THIS BULLETIN TELLS YOU HOW

# THE Health Bulletin



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## MALNUTRITION AND TUBERCULOSIS

Wm. R. P. Emerson, M.D.

At least one-third of the children of school and pre-school age are underweight, or malnourished. By giving proper attention to the essentials of health, practically all these children can be made well in their own homes within a period of three months.

In order to get a child well we first of all find the cause of the malnutrition. The causes are physical, mental or social. We must then remove the cause and provide him with the essentials of health, *i. e.*, removal of physical defects, establishment of home control, prevention of over-fatigue and correction of food and health habits.

These essentials of health can be accomplished by controlling the parallelogram of forces that safeguard the child's health, *i. e.*, the home, medical care, the school and the child's own interest. These forces are co-ordinated in the nutrition class which should be carried on in the schools, hospitals, and wherever a group of undernourished children can be brought together.

The results are that these children can be made to gain in their usual environment at the rate of from two hundred per cent to eleven hundred per cent of the average rate of gain of the normal child.

The younger the child the less his resistance to tuberculosis. In order to save the child we have either to prevent infection or increase his resistance. The work of the tuberculosis associations has been directed chiefly to preventing infection. In addition to this, work should be directed toward building up his resistance and this means to build up his nutrition. Therefore the problem of tuberculosis is essentially the problem of nutrition.



## THE COUNTY HEALTH OFFICER AS A FACTOR IN THE T. B. PROGRAM

By K. E. MILLER, M.D., Director County Health Work, State Board of Health

(Read before second annual Conference on Tuberculosis, Goldsboro, October 3, 1922)

Anyone who would define the essential duties to be performed by a local health organization, of whatever size or description, could not omit the great tuberculosis problem. Other devastating plagues have come and gone, but the great white plague remains the captain of the men of death. In tuberculosis, therefore, the health officer finds an adversary worthy of his best mettle. Unfortunately, however, it is believed that the average health officer's respect for the strength of his adversary is so great as to deter him from the challenge. But the strength of the tuberculosis foe is like the strength of the proverbial bundle of sticks. Break each one separately and the task is easy. The many factors directly or indirectly contributory to the origin and development of tuberculosis are too well known to need enumeration. But for every factor concerned in the production of tuberculosis there is offered an avenue of attack by health agencies. Achilles was not killed by a mighty blow upon the head, but by a little arrow wound in the heel. And so the health agencies must seek for the most vulnerable spot in their adversary, where a timely though perhaps insignificant blow will have telling results.

Certain aspects of the tuberculosis problem truly belong to the field of the specialist. It is a fallacy, however, to assume that only the specialist can wage war against this disease. The very fact that tuberculosis is such a complex and angular problem provides avenues of attack for even the rankest amateur who need not necessarily be trained in medical lore. As a matter of fact, the outcome of the struggle ultimately depends upon the rank and file of laymen who shall have been trained and educated to perform the duties devolving upon them.

### Duties of the Laymen

1. They must understand and practice the general principles of hygiene.

2. They must have a knowledge of the origin and spread of tuberculosis.

3. They must learn the importance and necessity of presenting themselves to the medical profession for early examination.

4. They must learn the necessity of faithful observance of the line of treatment prescribed when found infected.

5. They must provide the funds, by sale and purchase of Christmas seals, and otherwise, to support field workers, sanatoria, etc.

### Duties of the Local Health Department

How is the layman to learn his part of the game, except some one teach him? A certain amount of the foregoing information reaches the lay public from the State Board of Health. But this is not sufficient. For knowledge to become effective, it must become woven into the individual's habit of thought and action, which can be done only by intensive and persistent precept and demonstration.

1. Education, therefore, in its more intimate form, becomes the first great duty of the local health department. Some of the methods by which this may be accomplished are the following: (a) Organization of local societies or groups for the study of general hygiene and the tuberculosis problem; (b) Lectures, exhibits, newspaper articles, pamphlets, etc., on the subject of tuberculosis; (c) Nursing visits for the purpose of instruction and demonstration; (d) Organization of Modern Health Crusade.

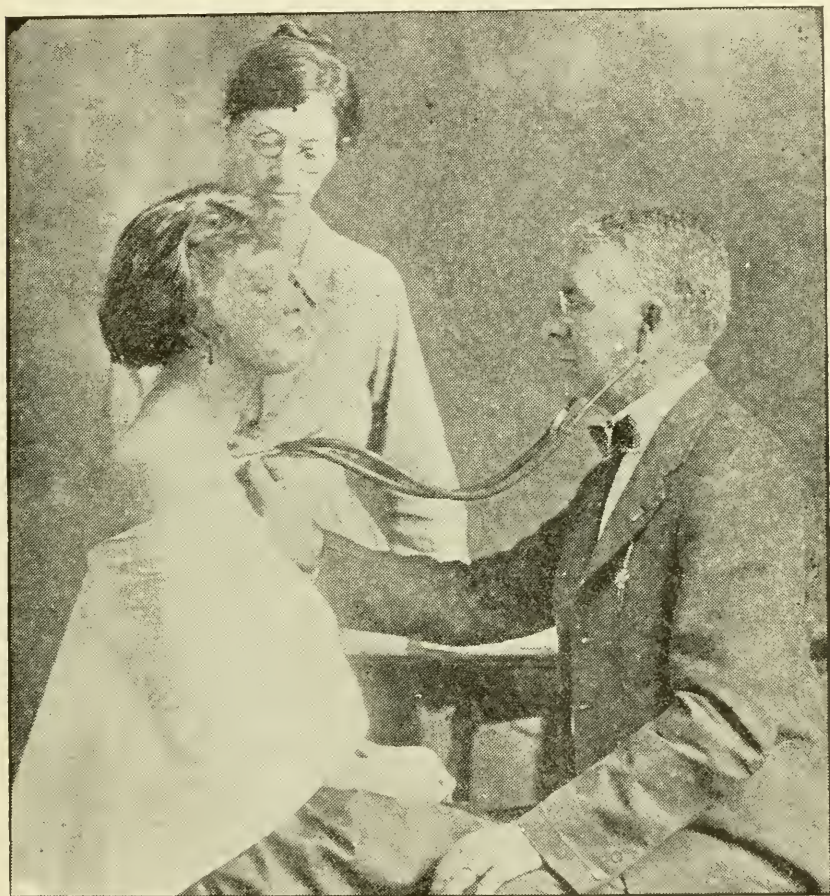
2. Organization of special clinics for Life Extension and T. B. examinations.

3. Special attention to reporting of T. B. cases, and follow-up work in infected homes, for the purpose of inducing all contacts with T. B. cases to be examined.

4. Securing provisions for proper treatment of T. B. cases: (a) State

Sanatorium; (b) County Sanatorium. In many instances it is possible for the health officer to exercise sufficient energy and influence to induce his county authorities to provide funds for the establishment and maintenance of a local county sanatorium. The big word here, how-

possible or impracticable, the health department should put forth every effort to secure rest in bed for the patient in outdoor sleeping quarters, with isolation, so far as practicable, from other members of the family. Along with this, of course, goes the inculcation of habits for the protec-



**Patient Receiving Examination at the Diagnostic Clinic. Hundreds of These Examinations Are Made Without Charge Every Year in All Sections of North Carolina**

ever, is "maintenance." It is a mistake to allow a county to build a tuberculosis sanatorium unless suitable and adequate provisions are made for the maintenance of the institution, including medical services, from sources other than the county health officer. (c) Home treatment. Where sanatorium treatment is im-

possible or impracticable, the health department should put forth every effort to secure rest in bed for the patient in outdoor sleeping quarters, with isolation, so far as practicable, from other members of the family. Along with this, of course, goes the inculcation of habits for the protec-

tion of others from the spread of the disease.

5. Testing of cattle for tuberculosis. The State Department of Agriculture is carrying on work of this kind in certain counties in an intensive manner, which they call "area work." An arrangement is effected with the county whereby every cow



in the county is included in the test. Every health officer should exert his influence toward getting this work done in his county.

6. Organization of nutrition classes in the schools. On account of the fact that tuberculosis is an infection, having its origin primarily in debilitated childhood, the opinion is held by our foremost tuberculosis experts, including Dr. L. B. McBrayer, that one of the most direct blows that can be dealt this disease is to improve the nutritional condition of the school-child, since the tubercle bacillus thrives very poorly in the body of a well-developed and well-nourished child. Not only so, but the nutritional state of a child is an excellent index to his general physical well-being. Diseased tonsils and adenoids, bad teeth, hookworm, malaria, and even acute infections, such as bad colds, reflect their presence in the weight curve. In fact, the scales will tell more about the physical efficiency of the school-child than any other single examination procedure. This point is given particular emphasis, for the reason that health officers rarely consult the weight chart with reference to the child under observation. In justice to him, however, it must be said that the weight record on the school examination card is of very little value. In the first place, there is no common basis of comparison, since each group of school-children is weighed on a different pair of scales, which is more than likely to weigh too heavy or too light. But much more important still is the fact that, at best, the weights are no closer than yearly intervals. Assuming that the weights are accurate, the ordinary school-card record gives a picture of the child's physical state only in cross-section, or in a stationary condition. To be of any real value, the weight record must be taken at weekly intervals, so as to make it possible to form a weight curve that will show the child in moving pictures, so to speak, progressing either forward or backward, as the case may be, and the rate of progress being made.

Nutritional classes can be carried on very effectively in connection with the Modern Health Crusade. Herein lies some of the most important work of the public-health nurse. So important, indeed, is this line of procedure that the State Board of Health is planning to put a special corps of nurses in the field to develop the nutritional class work

among the school-children of the State. For further information on this subject you are referred to Dr. L. B. McBrayer.

7. Sale of Christmas Seals. While this is largely a duty belonging to the laymen, nevertheless every health department should be the center of seal-sale activity. Committees and organizations to conduct the sale campaign are to be formed; special leaders are to be selected; effective advertising is to be done; and the whole program has to be enthused with the spirit of push and go. Whether the health officer himself performs these duties, or not, is immaterial, but he must assume the responsibility for having it done, either by himself or some one else. He must not, however, make the fatal mistake of taking anything for granted, but must see to it that every strategic position is effectively manned, and that the program is carried out according to specifications.

7a. Although the clinical diagnosis of tuberculosis belongs primarily to the work of the specialist, I believe that every health officer should acquire such knowledge and technique in chest examination as to be superior to the average practitioner with whom he is associated. In this way he can lead his local profession into a better class of physical examinations, which will result in better and earlier diagnosis. In this respect the health officer is particularly fortunate, since it is my understanding that the State Sanatorium is willing to receive health officers for a course of intensive training in chest examinations. A stay of two weeks, or more, at the Sanatorium for this purpose would constitute a valuable investment of time and money by any county, and it is hoped that as many of the county health officers as possible will avail themselves of this opportunity.

8. Finally, whether the health officer would have a part in the anti-tuberculosis program or not, he cannot escape it. Every case of contagious disease prevented, every case of hookworm or malaria cured, every tooth repaired, every pair of diseased tonsils removed, every milk or food supply improved, every truth of hygiene and sanitation planted in the minds and habits of the people—all contribute strength to the winning struggle against tuberculosis. So much is this true that some authorities hold the view that the final overthrow of tuberculosis will come as a

by-product to successful health work in other lines. Whether this be true or not, the fight is being won, and the health officer who would willfully neglect any duty within his power to advance the tuberculosis program is not only lacking in foresight, but unworthy of the name of health officer.

As to how extensively a health department can enter into the duties described, this is a matter which must be determined by local conditions. Antituberculosis service, like any other health service, is a purchasable commodity, which is to say that the more facilities the health officer has at his disposal, the more actively he is enabled to engage in the tuberculosis control work. It is, of course, generally conceded that the public-health nurse is an important instrument in the control of tuberculosis. But, though important, she is not essential in the sense that nothing can be done without her. For home visitation and nutritional class work, the public-health nurse is a necessity, but the many

other avenues of attack are open even to the lone-handed health officer. And while his duties in other fields may limit the amount of attention he may give to the tuberculosis program, he must not fail to do something simply because he can't do it all. On the other hand, those devoting their entire time and study to tuberculosis work must realize that the local health officer's job should be a balanced affair, in which the health officer must exercise judgment in the allotment of his services to many different activities. The tendency of a specialist in any line is to rate his particular interests above all others, and to be more or less intolerant toward the fellow who does not view his line of work in the same proportions as the specialist himself does. There is, therefore, room on both sides for a better understanding of the possibilities and limitations of the local health department with respect to the antituberculosis work in which this conference is so deeply concerned.

## THE VALUE AND LIMITATIONS OF RADIOGRAPHY IN THE DIAGNOSIS OF PULMONARY TUBERCULOSIS

P. P. McCain, A.B., M.D., Sanatorium

(Read before the Medical Society of the State of North Carolina, Winston-Salem, April, 1922)

Previous to five or six years ago the X-ray was generally considered of very little help in the diagnosis of tuberculosis, and even exhaustive books on this disease up to that time did little more than barely mention its use. The wonderful improvement in X-ray apparatus and X-ray technique, however, and the researches of such men as Miller, who has made valuable additions to our knowledge of the minute anatomy of the lung, and of Dunham in showing the relation of the pathology of tuberculosis to roentgen findings, have put radiography on a footing second to none in the diagnosis of this disease.

The first essential for accuracy is good pictures. Stereoscopic plates are absolutely essential. It was not until the development of the stereoröntgenogram that chest radiography began to be recognized as of any value. Stereoscopic plates make it possible to determine the location of

normal and abnormal densities in all three dimensions. The densities are not superimposed and they can be seen in their proper relation to each other.

A plate changer and stereo-tube-stand, making it possible to get the two exposures in the upright position while the patient is holding the same breath, are greatly to be desired.

Good pictures can be made with a number of different techniques. We have gotten the best results from the use of films with double intensifying screens and a fine focus tube. This gives so much better detail that one accustomed to the "norm" of another technique needs to be on his guard to keep from reading too much into his films.

The second requisite for accuracy is correct interpretation. Before this is possible, it is necessary for one to become familiar with the shadows

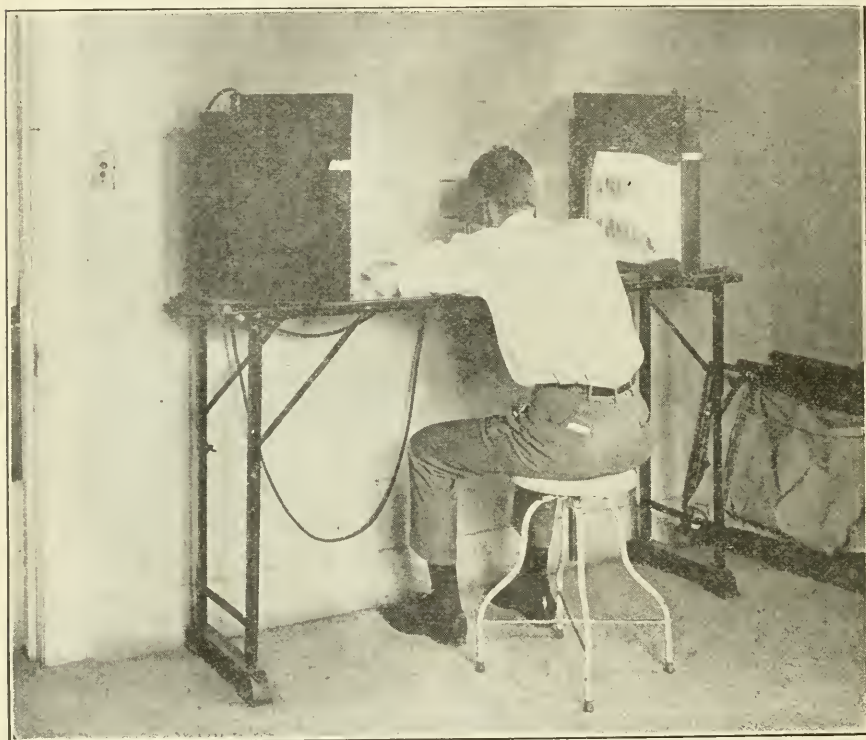


cast by the normal lung structures; he must learn both the gross and the minute anatomy of the lungs; he must have a thorough knowledge of the pathology of tuberculosis; and he must be familiar with the shadows cast by both the destructive and reparative processes in tuberculosis, namely, infiltration and exudation, caseation, cavitation, fibrosis, and calcification.

In the adult, tuberculosis almost always begins above the third rib

of both destructive and reparative changes are generally to be found. A variety of densities, therefore, is one of the most distinctive characteristics of the shadow cast by a tuberculous lesion on an X ray plate.

In regard to the kind of shadows cast by the various stages of the tuberculous lesion we may briefly say that infiltration of the perenchyma showing pathological activity appears as a mottled or cottony density with fuzzy outlines and sur-



**The Stereopticon Machine is Indispensable in Reading X-Ray Plates. It Enables the Physician to Obtain the Correct Perspective, Without Which the X-Ray Plates Are of No Value**

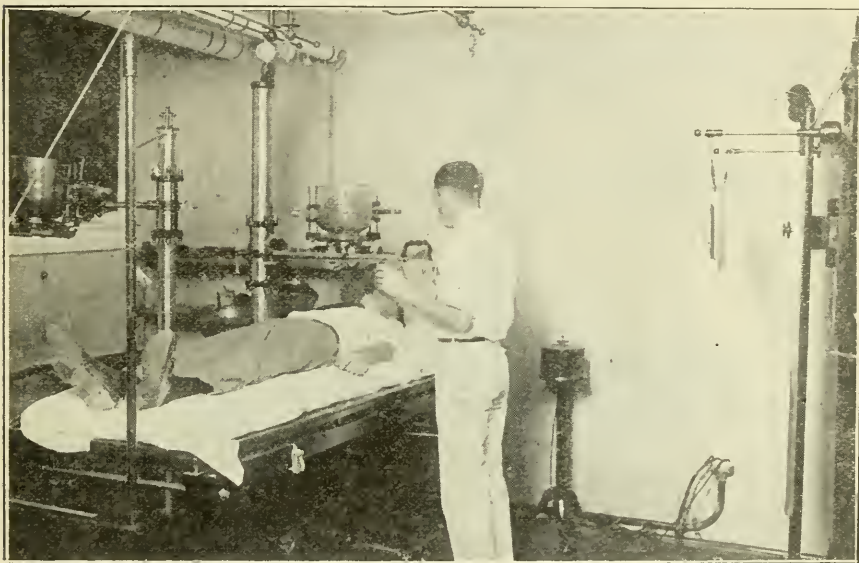
and usually at the apex. Lesions limited to the base have to be considered due to some other cause, unless proved to be tuberculous. Owing to the anatomical structure of the lung and to the manner in which tuberculosis spreads, the initial lesion, as Dunham has shown, is cone-shaped. The base of the cone is toward the periphery, and the apex toward the hilum. Tuberculosis is a chronic disease, and various degrees

rounded by a slight hazy density, due to collateral inflammation. Caseation casts the densest shadow next to calcification. The shadow is uniform in the center and gradually merges towards its margin into the shadow of infiltration. Cavitation, of course, gives an area of greater transmission of ray, or a "high light," surrounded by a band of greatly increased density. Fibrosis appears usually as bands of consid-

erably increased stringy density, or occasionally in cases of massive fibrosis as a homogeneous density with the mediastinal content drawn toward the affected side. Calcification causes an absolute density with clear-cut margins.

The ease with which X-rays pass through the normal lung parenchyma, causing even slight densities from abnormal conditions to stand out in contrast, makes accuracy of diagnosis in chest diseases possible to a greater degree than in most of the other parts of the body.

tions have been made by different members of the staff. After the findings are recorded separately, a conference is held, at which time the physical and X-ray findings are compared, the history, the clinical data and the laboratory reports are reviewed, the complications are noted, and a prognosis made. When there is a considerable difference between the X-ray and the physical findings, the chest is gone over together in an effort to correlate the findings. This study has been of inestimable value to us.



**There is No Danger or Discomfort to the Patient in Having an X-Ray Picture Made. The Findings Are of Great Value in Diagnosing and Prognosing Tuberculosis**

After six years experience in chest work, without the advantages of the X-ray, and four years with a checking of my physical findings with stereo-röntgenograms, the writer has a great respect for the X-ray and a fuller sense of the limitations of the physical examination.

For three and a half years we have been making stereoscopic X-ray plates on each patient admitted to the North Carolina Sanatorium. The plates have been read by number only, so that they would be interpreted independently of the findings on physical examination. For the past six months the entrance examinations and the X-ray interpreta-

After six years experience in chest work, without the advantages of the X-ray, and four years with a checking of my physical findings with stereo-röntgenograms, the writer has a great respect for the X-ray and a fuller sense of the limitations of the physical examination.

In the differential diagnosis of tuberculosis from other diseases of the chest, such as lung abscess, interlobar empyema, infarct, pneumonia, etc., the X-ray gives invaluable information.

In the early stages of clinical tuberculosis the X-ray is often of great value and is occasionally sufficient alone to make a diagnosis,

but in the great majority of cases a correlation of all possible data is necessary.

Occasionally the X-ray will show a definite lesion which is pathologically active when there are no definite physical signs or clinical symptoms. Rarely also the X-ray will show an active lesion at an apex where there are no abnormal physical signs, but where there are suspicions or definite signs at the opposite apex.

With extreme rarity a case will show tubercle bacilli in the sputum which has no definite physical signs and no demonstrable lesion by the X-ray.

Lung lesions limited to the base, which in the adult are almost always nontuberculous, are occasionally found by the X-ray to be definitely tuberculous. When the X-ray shows no abnormal density, or a density not characteristic of tuberculosis, physical signs at the base can with

much greater surety be ascribed to some other cause.

In moderately and far-advanced disease the X-ray almost always shows the lesions to be more extensive than the physical examination by the most careful clinicians. The X-ray also shows much more accurately the character of the pathological processes. Cavities of even moderate size may occasionally give no physical signs and be discovered by the X-ray.

Small localized pneumothoraces, interlobar pleurisy, scattered areas of calcification, caseation, and many of the other pathological changes which may give only obscure or no physical signs, can be determined, both in character, location and extent, by stereoscopic X-ray plates with a degree of precision which makes a careful X-ray examination in well-developed tuberculosis almost the equivalent of a living autopsy.



DR. KRAUSE SAYS: "NORTH CAROLINA WILL BE THE HEALTH RESORT STATE OF THE FUTURE. YOUR CLIMATIC CONDITIONS ARE NOT SURPASSED BY ANY STATE EAST OF THE ROCKIES,"



## SUCCESSFUL TREATMENT OF TUBERCULOSIS AMONG NEGROES

J. W. WALKER, M.D.,

Director Negro Division, State Sanatorium, Sanatorium

A few years ago, at a meeting of the Southern Conference on Tuberculosis, in Asheville, North Carolina, I was asked the question, "Does the negro get well of consumption? Is he amenable to treatment?" In answer, we passed in brief survey twenty negroes under treatment. They ranged in age from fourteen to fifty. The diagnosis of tuberculosis in these patients was confirmed by

majority of these patients since that time. Some of them are still in Asheville, while others have returned to their homes. Not one has died. The great majority are working; the others are enjoying fairly good health.

The question of early diagnosis has been stressed here today, and this part of the problem is especially important among negroes. The ef-



This is What We Mean by the Educational Campaign Among the Negroes. These Colored People Have Just Attended a Lecture On the Prevention of Tuberculosis by Mrs. F. C. Williams, Director of Health Educational Work Among Negroes

either Dr. Minor, Dr. Dunn, Dr. Colby, or Dr. Ringer, of Asheville; so there was no question of their having it. Then presented different stages of progress. We had some of the blackest, some of the brownest, and some of the whitest negroes that can be found among us. We gave a brief history of each one as presented. They answered conclusively the question as to whether the negro is amenable to treatment, and the inquiry as to whether he gets well. I have had the opportunity and good fortune of keeping up with the ma-

liciency of the negro physician must be brought up. I wish to say that the National Medical Association, an organization of negro physicians of this country, has taken up this work, together with the negro insurance companies, and at their annual meetings a morning session is taken up in helping the negro physicians in their effort to make early diagnosis of tuberculosis among our people.

But even when the diagnosis has been made, it is a mighty hard thing to convince our people that they have it. They are slow to believe that



they have tuberculosis unless they are sick, unless they are feverish, or are coughing, or emaciated, or feel bad otherwise. So you see that it is very important not only to make an early diagnosis, but to convince the average negro that he has tuberculosis, so that he may be put under the proper treatment.

Another great barrier is the negro's financial condition. It is rather the exception that the negro is able to be treated for any length of time. If he can afford to pay for six weeks or eight weeks treatment, he does well. After that time, usually, the condition of mind begins to work upon him, and, of course, when he begins to worry he begins to go down. That is another point we must stress, and one that faces us on every hand—the lack of proper means to care for them.

The negro is willing to be treated, and we are glad that the grand old State of North Carolina is recognizing the worth of the negro. He is in the kitchen of our white friends, he

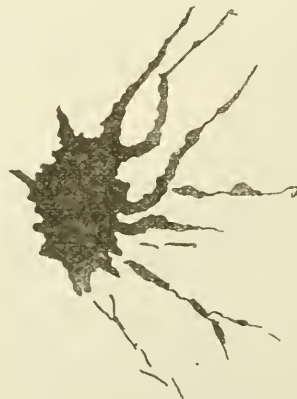
is your chauffeur, she is your nurse-maid, and we come in close contact with you on every hand. We appreciate the great efforts that are being made under the leadership of such splendid men as Dr. Rankin and Dr. McBrayer and Dr. Way, and others whom I might mention. The splendid work being done under the State Board of Health by our supervisors is already showing great effect, and, my friends, if you will continue to help us get rid of this dread disease we will continue to carry forward the great work of health in North Carolina. We will join hands with you in tilling the fields of this great State; we will continue to help bridge her chasms; we will continue to help to tunnel her mountains; we will continue to help to make her blossom as the rose. We stand ready to help remove the menace in any way possible. We only ask that you continue to help us, as we feel that you are doing, under the leadership inspired by Christian motives, because of your interest in humanity.



*THIS IS ONE OF THE  
SUREST WAYS TO SPREAD  
TUBERCULOSIS.*

*NO COUGHING AND SPITTING—*

*NO TUBERCULOSIS.*



## THE EFFECTS OF THE MODERN HEALTH CRUSADE IN THE RURAL NEGRO SCHOOLS OF EDGECOMBE COUNTY

By MRS. CARRIE BATTLE, Supervisor, Tarboro

(Read before the second annual Conference on Tuberculosis, Goldsboro, October 3, 1922)

In the school year of 1919-20, as I visited the homes in the rural districts, I found, for the most part, the living conditions not very satisfactory. In most of the schools, conditions were no better. In handling this situation I needed co-operation of the parents.

I knew it would bring about a great dissatisfaction in the homes and in the schools if I attempted to say or do anything before letting the parents and other folks know my motive for wanting the living as well as the school conditions changed.

The organization of health leagues for the grown-ups and for the little folks made a good foundation for the Modern Health Crusade in Edgecombe County. At the league meetings, topics pertaining to the health of the children were discussed and appreciated by all.

The parents soon learned to believe that all who had visited their homes for the purpose of helping them, and who had spoken to them from time to time, were interested in their's and the children's good health, and so expressed themselves.

After I found that confidence had been gained, I planned to put the Modern Health Crusade into the schools, with the expectation of getting the hearty support of the parents and other folks in the communities.

I decided to begin with one school in the northern part of the county. I went to the school and carried the necessary material for the crusade. As usual, I carried the scales to weigh the children. They were always anxious to be weighed. Each one wanted to weigh the greatest number of pounds. In their health meetings they had been taught to do a few of the chores, even though we did not have the crusade in our schools. I said to them, "No boy or girl can weigh today who did not sleep with windows open last night, who did not wash face, ears and neck or did not clean his or her finger nails." Before I could say more, one

little eight-year-old girl said, "Nobody told us to do that, but we will do it tomorrow." I mentioned other chores, after which I asked the children if they wanted to be crusaders. The answer, "Yes," came promptly. This was the time while interest was high. I told them what they must do, and why. The folders were given out and explained to teacher and pupils alike. One boy asked, "Will I have to be a crusader at home, too?" He was answered in the affirmative, of course. The girls, in their eagerness, said that they were going to look so nice the next morning that the teacher wouldn't know them, and that they were going to scrub the schoolroom floor that afternoon, so that their clothes would not get soiled the next day. They went to a near-by neighbor's and borrowed tubs, soap, hoes and rakes. The girls scrubbed the floors and washed the windows, while the boys cleaned the yard.

I left with a promise that I would go back on the next day and weigh them. I did so. Oh! how clean and cheerful the children looked. The grounds and school were clean and everything was pleasant. One boy wrote on the blackboard, "These scales weigh crusaders only." The children had been inspected by the teacher, and it was found that only a part of the chores had been done. I asked, "How many slept with windows up last night?" About twenty-five hands went up. One little boy spoke up quickly and said, "Pa said that was too foolish—I would catch cold and die if I slept with the windows up." Another boy said, "My daddy said that, too, but I waited until he was snoring and I raised the window. My daddy said he felt fine this morning. I told him the window was up, and now he is a crusader." I left this school with the crusaders in the teacher's care.

The teachers organized the children into a Modern Health Crusade Club. This club does not only do the chores, but at their meetings they re-

port all tubercular patients, when found. If the patients are in an humble condition, they take from their treasury money to help them. The smaller children make sputum cups to be given to these patients. These children are very happy at their work. The homes are clean and airy. The change is noticeable by all who pass that way.

About a month afterwards, I met a white gentleman, who said to me, "Why, you have changed teachers in School 3, haven't you?" I said, "No, sir; the children are Modern Health Crusaders." "Is that why I see so much cleaning yards and whitewashing among your people? If so, keep the crusade going."

In this community the Modern Health Crusaders have done a big piece of work.

Dr. C. L. Outland, who was at one time the Edgecombe County health officer, and Miss Clara Ross, who was at the same time Red Cross nurse, asked me if I would put the crusade in the Moore's Crossing School, and said that they were going to watch this special school and note the change in conditions, if any. I put the crusade in, and in one month from the time, the children and the school looked as they had never looked before. The smallest child delighted in telling why the change had come. At this school, when Dr. Outland was about to take the picture of the crusade group, it was amusing to see the crusaders go into the schoolroom to get their drinking cups to be held up in the group, crude as some of them were.

The homes of these children are kept clean, and the windows are up at night. The parents say that they are proud of the crusade and wish that they could wear a button, so that everybody would know that they were doing the chores and seeing to it that their children do them.

Since that time I have put the crusade in the thirty-nine schools of the county. At first we had some trouble about drinking cups for each child in a family. Some of the grown-ups thought that where there were sisters and brothers, all could drink from the same cup. The children have taught them that each one must use his own cup, and why. Now you will find the mothers busy saving baking-powder cans, jelly glasses and cups. These drinking cups are held up so as to be seen each morning at the inspection period, which is from 10 to 10:15. Two of the larger girls

do the inspecting. If a child forgets his cup, he will stop at some home along the road and ask for a baking-powder can. It is not rare to go into a home and see cans piled in a clean box, and the housewife will tell you that she saves them for the crusaders.

The Logsboro School, with an enrollment of 135 pupils, is one of the fair samples of the Modern Health Crusade in Edgecombe County. There you will find the schoolroom floor white and clean, the stove polished, desks tidy in and out, and the children clean and neat always. This school stands by the roadside, with a yard so clean that one would think that the children were under hard rule. Not so; this is the work of the Modern Health Crusaders. There are 135 pupils and the same number of drinking cups. These cups are put into a large wash-pot twice each week and sterilized. The larger girls do this, under the supervision of the teacher. In this community, homes are kept clean, windows and doors are screened, and it is not a hard task for them to keep the windows raised.

The boys at one school marked a banner which reads, "Nobody but a crusader can enroll in this school."

The Crusaders in Dixon A School had a health program and rendered a play entitled "The New Child." This play did much to teach the grown folks how to care for the tubercular patient.

In the schools where the kitchens are attached, the crusaders have learned to eat cereals and to drink milk.

For the most part, where you once saw in Edgecombe County, untidy, underweight children coming out of homes not well kept and going into a school room which might be termed a "rough-house," now you see tidy, normal weight children coming out of a well-kept home and going into a school room that is sanitary and well ventilated.

I asked the teachers of one of the largest schools to invite the parents to be present at nine o'clock on one Friday morning. They did so. A number of parents came. After the usual order of opening, the teacher asked some of the children to tell one thing they did the day before. Away they chattered! One little girl said, "I don't feel well today, because I didn't take ten deep breaths." This one expression went with these parents a long time. The teacher asked

the parents to stay and see the inspection. They did so and felt proud to know that their children were in this band of crusaders. This made them more determined to help the children. They stayed on to see the children line up for dinner. When the bell tapped, one hundred and seventy-two children, each, with a drinking cup, passed out of the door. They washed their hands and ate dinner, after which the bell tapped and two lines were formed. The four water carriers, each with a bucket and a dipper passed up and down the line and filled each child's cup, of whatever description it was, with water. These parents were convinced and said, "If this had have gone on years ago, all of us would have had better health."

In each school, the crusaders who have the ability are asked to make and write a crusade quotation on the board, every day at noon. This is very interesting. It brings about rivalry. Here are a few of the quotations: "The germs of a 'rough house' will kill a Modern Health Crusader." "Dr. McBrayer's buttons have saved my life and they will save yours."

"We own a clean body, clean home and a clean school." "No crusade band is complete without individual drinking cups." The children find a great deal of pleasure in this exercise. The smaller children who do not go to school are learning, at home, to be crusaders.

The children have taught their parents to carry individual bottles of water to the field, instead of carrying one jug of water and one dipper for the use of all in the field.

The Moving Picture Car and the health talks given by Mrs. F. C. Williams and Dr. Ransom, have done much to help my people, in Edgecombe County, feel it their duty to push the Modern Health Crusade.

The Modern Health Crusade has helped the attendance and discipline in our schools. Its influence in the homes and schools of the county will be felt in the coming years.

There are thirty-nine rural schools, in Edgecombe, with an enrollment of five thousand two hundred and thirty-two pupils. Four thousand and twenty-nine of these pupils are Modern Health Crusaders.

*T.B. BACILLUS SAYS*



*FROM NOW ON PEOPLE WILL BE  
TALKING ABOUT ME MORE THAN  
EVER— AND THEY WILL SAY IT  
WITH CHRISTMAS SEALS.*

**BUY TUBERCULOSIS CHRISTMAS SEALS**



## THE TUBERCULOSIS CHRISTMAS SEAL SALE IN WINSTON-SALEM

By DR. R. L. CARLTON, Health Officer

In our community the anti-tuberculosis activities are not carried on by a distinct and separate organization, but such work is a division of the local department of health which department has for the last three years conducted the sale of tuberculosis Christmas seals. Whatever degree of success that has attended the sale of seals in our community is due to the fact that we have had the coöperation of a large number of persons in that community in so far as this particular activity is concerned. We believe that it is perfectly all right for one or two individuals to become fired with an unquenchable zeal for some good cause and to have visions of great good to be accomplished thereby but our observation has taught us that to really do things the interest of a good many persons must be enlisted in addition to those who first caught the vision. It has been with the idea of Kipling in mind that "the everlasting team work of every bloomin' soul" is needed that we have tried to carry out our tuberculosis campaign and especially the sale of seals in Winston-Salem.

Believing that our people would respond if they know something of our proposition, a considerable part of the year's activity has therefore been taken up in telling the public something of what our tuberculosis problem is. In doing this we have used National and State organizations' material, their cuts, their newspaper items, their illustrations, etc. We have begged and borrowed and occasionally bought cuts and leaflets and booklets from other state organizations and even one from Canada. To such material is generally added some local item or picture and it is then mailed or distributed. Throughout the year this class of publicity material has been sent out through the papers of the city, through our own nurses, by distributing through the schools, through the clinics, through the clubs and civic organizations, etc. In every monthly report of the department of health there is a section

devoted to anti-tuberculosis activities, the relief of tuberculous poor, the distribution of supplies, the maintenance of Modern Health Crusade classes and Nutrition classes of undernourished children and often enough to keep the public reminded the fact is mentioned that such work is largely financed by tuberculosis Christmas Seals.

In addition to telling our public of the things we are doing it is always well to keep in the foreground of their memories something of the problems with which we have to contend. In our city it is very frequently mentioned that our tuberculosis case and death rates for both adults and children are away above the average for the country at large or our State as a whole—indeed at this time if this meeting were being held in our city I have no doubt our efficient program maker would have my county and city emblazoned forth in large red letters as leading most places in this section with high tuberculosis rates. With the figures handed out it is always well to mix in some human interest stories of actual persons and actual occurrences in the community—this, too, we have tried to do.

As the autumn season comes along it has been our plan to intensify somewhat the tuberculosis publicity, losing no opportunity to call attention to the dangers of it as well as to some of the things which should be done to combat it. At this season of the year the contagious diseases of childhood are more frequently seen than at other seasons. We send a special letter of instruction and warning regarding the possibilities of tuberculosis to the parents of every reported case of measles, whooping cough, diphtheria, scarlet fever, etc.—this in addition to the regular instruction of the visiting nurse. Other literature concerning the advantages of after examinations by private or clinic physicians is sent them.

The school nurses, crusade leader and nutrition worker lose no op-

portunity to emphasize to the school children the value of fresh air, rest, proper diet, etc., at the same time telling them of the Christmas seal and what it may mean for some of their own number.

As the winter approaches whenever an opportunity is offered to mention health matters to any of the clubs or civic organizations tuberculosis is our theme and Rotarians, Civitans, Kiwanians, Lions or to whatever club we may be speaking hears something of our problem and something of the possibilities of a good seal sale.

As the time comes along for actual organization for the sale of seals we have gone to a group of our leading business men and women and asked for permission to use their names as members of our executive committee. We have no trouble in securing the names of any persons approached. Last year there were on our committee the names of the mayor of the city, treasurer of the largest manufacturing enterprise in the city, three presidents of other leading manufacturing industries, three presidents of civic organizations, a banker, two prominent business men and three ladies well known in club and social life. These persons not only allowed us to use their names in our publicity, on our stationery, etc., but they came to our committee meetings and would spend two hours or more on several occasions seriously considering ways and means of putting on a good sale.

These persons, in my opinion, were the keynote in making our sale last year the largest we have ever had. When our canvassing teams were made up these members of our committee were of invaluable aid and because of them there were persons on our teams to do canvassing whom under other circumstances we could never have induced to have done work of this kind. Some of the members of our executive committee actually did canvassing themselves and handed in some of our best returns. It is easy to see the psychology of having one prominent business man approach another for a subscription to work of this character. It is also pretty clear that when the business house or factory is approached for a subscription if one of the members of your advisory or executive committee is an officer in that business concern you will get a sympathetic hearing—likewise a contribution.

Some two to four weeks before the day of the canvass we began getting our canvassing teams engaged. A team of at least ten canvassers was requested of the Woman's Club and the Rotary, Civitan, Elks and Kiwanis Clubs. This gave us five strong teams from representative men and women of the city. The teams were promised a one day canvass only—of course we did not deny any one the privilege of seeing a prospect after the day's canvass if he wanted to do so—but we asked for only one day's work and we lived up to that promise.

Our teams were not asked to canvass promiscuously, but a select list was made and they were asked to call on only those persons whose names they had on cards.

Preparatory to the canvass, there was mailed to 2,000 of our best prospects, beginning two weeks before the day set for the canvass, a booklet entitled "Tuberculosis in Childhood" which set forth rather strikingly the tuberculosis menace to children and had on the last page some pertinent facts of local conditions; four days later a post card bearing a cut of the Christmas seal and the following message: "The child is being recognized more and more as the focal point of the entire tuberculosis campaign. Tuberculosis workers everywhere are finding that the most effective way to teach disease prevention to the grown-ups is by instructing children in good-health habits," was mailed to those prospective patrons on our list; three days later a second post card bearing a cut of the double-barred red cross and the slogan of the campaign: "Every person in Winston-Salem having tuberculosis has a right to know it, to be properly treated for it, and to be so supervised that he will not communicate it to others" was mailed; three days later a financial statement setting forth what had been done with the receipts of the 1920 seal sale and showing the different items for which a tuberculosis budget was needed for 1921 was sent out; up to this time no one had been asked through any of our literature to buy a single seal; two days before the canvass, the last piece of literature was mailed, timing our mailing so far as possible so that our patrons would receive it the day before the canvass and possibly have it on his desk when called upon for a subscription; this folder was entitled:

"Why Buy Tuberculosis Christmas Seals?" and on the two inside and one back pages of that folder were set forth in very plain easily understood language ten reasons why the people of the community should buy seals.

There were mentioned the number of persons dying in the community from tuberculosis during the year; the number of new reported cases of the disease was mentioned, also the fact that every tenth death during the year was a tuberculosis death; our patrons were reminded that tuberculosis caused more than three times as many deaths in our city as did seven other communicable diseases combined. Attention was directed to the large number of unreported and unsupervised cases and that no citizen might consider himself or his family safe until all cases were discovered and treated; the large number of children who are ten per cent or more underweight and who need more milk and more instruction regarding themselves was mentioned as were the more than 1,500 children who were in Modern Health Crusade classes trying to learn good health habits and needing the interest and help of the citizens of the community; the work of the tuberculosis division of the department of health assisted by the various cooperating organizations of the city was pointed out; and finally it was mentioned that the tuberculosis

death rate for the city for that particular year was lower than for any previous recorded year and the public was urged to "buy Christmas seals and watch the rate drop still lower."

The remainder of my story is brief. A luncheon was held for the workers the night before the canvass, final instructions were given, the cards of prospective patrons distributed, etc. We are obliged to believe that some part of our propaganda went home and that our patrons did not forget it all for the same persons who four years ago subscribed \$600.00 for seals this year gave \$6,000.00 for them and did it apparently very willingly.

There was other work, of course, besides that of the one day's canvass. Those who were missed in the canvass were mailed a number of seals and asked by letter to buy them; school teachers and school children were sent a certain number of seals for each school room; colored ministers and colored lodges were sent seals which they were asked to buy; seals were placed on sale at cigar counters and in drug stores after the general canvass. In brief, every one was given an opportunity to help and our conclusion is that though the campaign cost us considerable effort and some cash as well that the decided increase in the receipts made both very well worth while.

## SUGGESTIONS FROM GREENSBORO

BY MRS. W. C. A. HAMMEL

At this stage it is hardly to be expected that a very rich sheaf of new suggestions may be garnered from the field. Greensboro's experience in the 1921 seal sale, however, is unique and from it perhaps a few grains may be gleaned.

Leading the State in the number of seals sold practically every year since the institution of the tuberculosis seal, Greensboro last year yielded the honor to a sister city. That the successful city is a metropolis and a twin made the loss no easier to bear.

With a precedent of 500,000 seals sold in 1920, Greensboro in 1921 set the bar a peg higher, and expecting

to clear it, made requisition upon the State Director for 600,000. An organization plan was perfected that might easily have sold and resold the extra 100,000 and might have reached every man, woman, and child, and stamped every December letter, parcel, bottle of milk, and loaf of bread in Greensboro and Guilford County.

(To save time you may be spared the recital of these fourteen organization points.)

1. The 116 women who are members of the District Nurse and Relief Association were divided into two camps—one to use the card system and sell by teams in the business



house canvass, the other to reserve its strength for the booth sales later on.

2. Preceding the campaign of the business houses, letters had been sent to prospects thanking them for their support in previous sales and asking them for an increased subscription on the plea of the growing need for care and instruction for the tuberculous in the community and the need of additional maintenance to meet the increased patronage from city and county at the District Nurse Cottage Sanatorium, established and maintained solely through previous seal sales. Tuberculosis literature and a cut of the cottage sanatorium with the year's financial report were enclosed in each letter. Other letters were sent to clubs, missionary societies, physicians, ministers and others asking their co-operation.

3. There was a special committee to follow up by personal solicitation the letters to banks, insurance companies, factories, and other important corporations.

4. Publicity of National, State and local conditions and purposes was broadcasted through the daily press on strategic dates.

5. And also by means of posters distributed among shop windows, public buildings, schools, and street cars, and by means of frequent run of trailers and ads in the picture houses and church recreation huts.

6. The work was explained to the student body at the two colleges where seals were left for campaigns and the Christmas bazaars.

7. A committee visited all bakeries and dairies, selling seals to stamp each loaf of bread and bottle of milk delivered on a specified day.

8. Sales in the schools are not permitted; but the school nurses explained to every class in the schools the significance of the seals, had the children write essays and make posters, and inspired the desire to spend at the city booths a few pennies of their Christmas allowance.

9. Booths were kept at the post office and at some one much frequented shop from 9 to 5 o'clock each day in December, and at a two day's indoor carnival of the Chamber of Commerce.

10. To assist in the booth sales, members of the Greensboro Federation of Woman's Clubs were invited to pair with members of the District Nurse and Relief Association. A multigraph copy of the complete

schedule of dates, booths, personnel, and hours of service was issued to each worker, thus avoiding for the chairman the wearisome and often futile task of telephoning, as well as obviating errors and inquiries, and affording to the worker advance information and the opportunity to supply a substitute worker if necessary.

11. The secretarial forces of the large insurance companies were canvassed upon permission of the company presidents.

12. The industrial secretary of the Y. W. C. A. presented the purpose of the seals to her clubs of industrial women.

13. For the first time in the history of Greensboro seal sales, an effort was made to reach the rural communities. Representatives of about twenty-five county communities were invited to meet for a conference at afternoon tea when seals were apportioned with sale instructions, posters and literature. Previously a meeting of the Guilford County teachers had been addressed on the subject of the seal sale in the county and their coöperation solicited.

Tried stunt of Crusade pageant—but gave it up—too suggestive of Ku Klux.

14. A tag sale of the tuberculosis cross was conducted by young girls under the management and chaperonage of a special committee.

Yet Greensboro and Guilford County did not sell quite all of the 600,000 seals ordered. It matters not how strong the organization nor how enthusiastic the salesmanship, there is always a certain supine, pre-occupied attitude of the public to be reckoned with. And the most responsive, most profitable portion of the public is usually the most business-like. The Greensboro public, just beginning to feel the general business depression of 1921, unfortunately and inopportunistly for the seal sale, had thrust upon it at this time two other important civic projects.

1. The Community Chest plan, which was to mean monthly pledges of large sums for the support of nine different social service organizations including the District Nurse and Relief Association, had been smouldering for months. It now flared up afresh with the approach of the new year and the 1922 budgets.

2. Before the seal sale campaign was under way, the date of the



\$100,000 bond election for the Guilford County Tuberculosis Sanatorium for which the District Nurse and Relief Committee had for years—three legislative sessions at least—fought and bled and lived, was set for December 20th.

With the prospects of increased taxes as a positive sequence to a successful election, the old friends of the local tuberculosis work who had in other years subscribed a hundred, sat down quickly and wrote 50 or perhaps 25 or 15. That was business, fair and just. But it thinned the cream on the milk of human kindness so far as the seal campaigners were concerned. Besides, thought the business man, with the community chest and county sanatorium to take care of its patients the District Nurse Association would not be needing a bumper sale.

On the inside, the efforts of the District Nurse and Relief Committee's best forces were shifted from the seal sale to strenuous activity in the sanatorium bond registration and election; for with the rural population of Guilford County weary and wary of taxes and organizing against the bonds there was need for all the strength that could be mustered among the proponents to carry the election. (The details of that accomplishment are not this story.)

In addition to these two purely civic enterprises, be it known that just over the horizon was looming a church campaign for an \$85,000 budget which was to include several forms of social service work.

Is it to be wondered then, that the 600,000 goal was not reached? It went hard to see the pennant slipping; but the committee, appreciating the case of the public, was both discreet and valorous in declining to employ any strong arm methods to save the day for the seals.

Indeed Greensboro was not defeated—not even downhearted—no! Her seal sale had merely stepped aside to give place to a bigger feature. Greensboro was beginning now to see the fruition of the hundreds of thousands of seeds that had been sown in Greensboro since seals were. Greensboro had sold more tuberculosis education than ever before, to more people in a more widely spread territory—and to a definite concrete end.

She had so well sold the sanatorium idea that the District Nurse Cottage Sanatorium, awaiting the construction of the County Sanato-

rium, has had to be enlarged to receive the increased numbers of city and county patients applying—patients who would have gone elsewhere, even out of the State, perhaps, to make the lonely fight among strangers in a strange land—or worse, have stayed at home to deal destruction to family and friends.

Greensboro has sold the physical embodiment of the seal purpose. Have you ever been approached by your cook or the furnace man with the request that you buy a brick to help build the new Zion church? The Guilford County Sanatorium is being built through the cumulative power of the million or so of seals sold by the District Nurse and Relief Committee, and through the demonstrations by the Association year after year of the use of the seal funds in the education, care and relief of the tuberculous and in the nutrition work in the schools by the Association's school nurse. And milk supply to tuberculous negroes. The outward sign of the inward grace realized.

If from this experience there are any outstanding suggestions which might be selected and emphasized they are these two:

1. Use every influence possible to prevent other important and unimportant campaigns from encroaching upon the seal sale period. By national order and by popular consent the twenty-four days of December are sacred to the seal sale. To most of us it is strongly local. But it is not merely local, nor is it alone a state campaign. It is these and it is national besides. It is in the last analysis the reaching out of the National Tuberculosis Association to every community in the land and to other lands to help the world stamp out disease. As we coöperate, so shall we profit. See, therefore, that the way for this great work is kept clear, that the seal sale has an open field, and that its right of way is respected.

And in this suggestion, turn about is fair play. Let us not in an excess of enthusiasm move up the dates assigned and by so doing overlap another local and national campaign—the Red Cross Roll Call—which also has official dates. Here too lies another stumbling block. Long usage in the past has engendered the habit, by some found hard to outgrow, of calling the seals "Red Cross Seals." Our chairman has warned against

this. In the beginning the Red Cross lent the prestige of its name to the Tuberculosis Association's enterprise, helped it to bridge over the slough of public ignorance and to get out on the open road of conquest. But now that that partnership has been amicably dissolved, with each organization still in mutual friendliness endorsing and commending the work of the other, the place of each should be recognized. There is otherwise great disadvantage in the confusion created in the minds of the people who through misunderstanding slight one or the other organizations—perhaps both.

The second suggestion is this:

Work with a definite local accomplishment in view. Do not merely sell seals. No matter how small the community managing a sale, nor how meagre the seal proceeds, let us be sure what we are going to do at home with our funds. This fits in with the National and State schemes, is an inducement to the seal purchaser, and brings a measure of education and relief to those at our doors.

Work for the great national purpose; work for the support of the good and wonderful things the State is doing; but have in view and at heart some local purpose and work hardest for that. Above all, be sure to spend, before the year rolls round, your seventy-five per cent of the seal income, and spend it on a demonstration which will not alone justify the public's investment and its trust in you, but which will

serve also an educational end, and be a stimulus to further achievement.

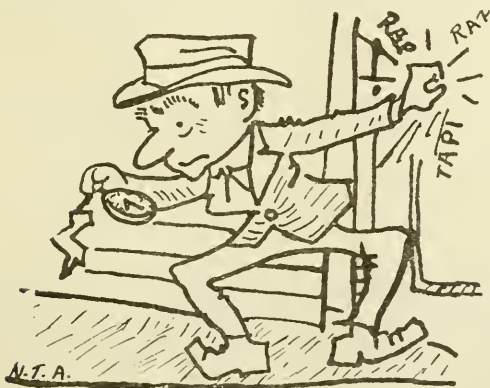
If your seventy-five per cent nets but \$10.00, reserve it and spend it. It will not build a sanatorium, but it will foster the education out of which sanatoriums grow.

Your fund may finance the treatment of a townsman at the State sanatorium; it may form the nucleus of a fund for a cottage sanatorium at home; through it may be extended material relief to a patient's family; it may maintain a nurse; it may provide milk or other nutrition for underfed school children; it may be applied on the expenses of an open air school, or a children's preventorium.

If a community chest plan threatens to come your way, make a bargain with the commission that will permit a seal sale if only from booths. Time and occasion will decide the local expenditure.

If you already have a sanatorium you have two paradoxical duties towards it and the people of your community—to get into it all the people who should be there—and by nutrition and other preventive measures keep out as many more as possible.

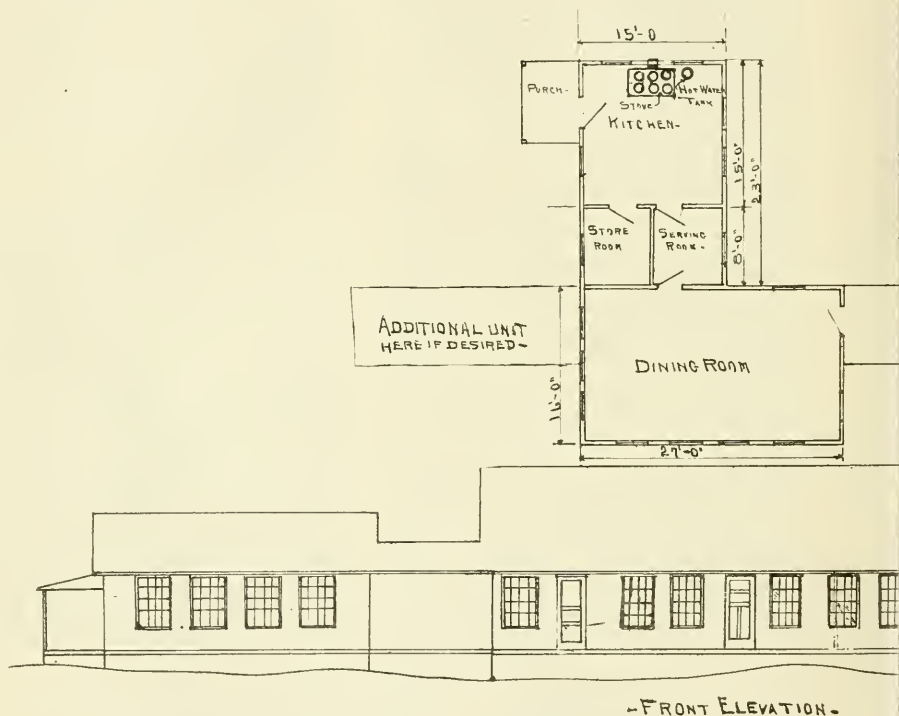
But whatever you do, have your seal sale. The National and State organizations need their one-fourth. They have not failed to make their demonstration of its use. But keep your share of the seal money and put it to work. The good old motto "work and save" is not adequate here. Let it be "work and spend."



JUST TIME TO  
ORDER YOUR  
CHRISTMAS SEALS.  
USE ORDER BLANK  
ON NEXT PAGE.

BUY TUBERCULOSIS CHRISTMAS SEALS

## SUGGESTED PLAN FOR A SMALL



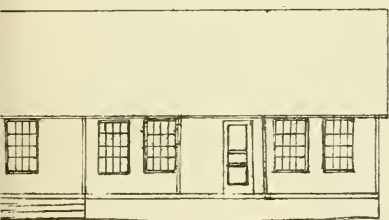
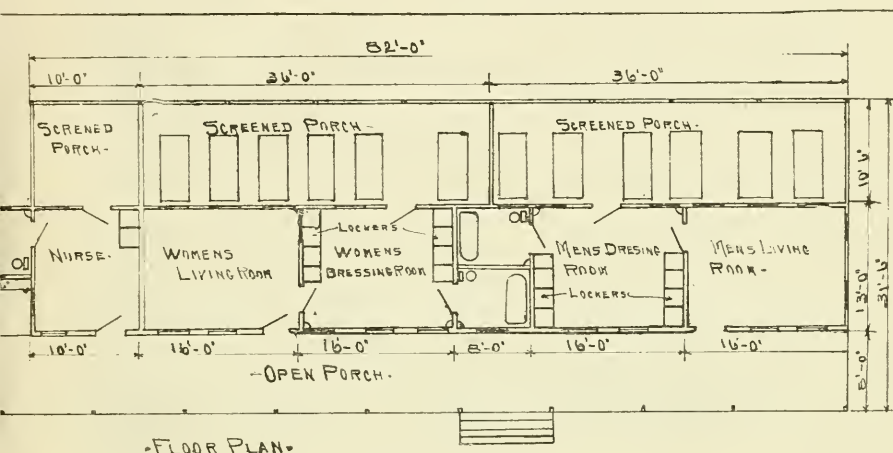
The plans which are shown here were prepared by the Bureau of Tuberculosis of the State Board of Health, are recommended for establishing a tuberculosis camp in counties where only a limited amount of money is available.

The main building is very simple in construction and can be erected at a cost of approximately \$5,600. This estimate is, of course, for a wooden building.

This unit will accommodate twelve patients, six of each sex. If desired, an additional sleeping-porch may be added to the right wing, which will increase the capacity for men to eight.

The size of the dining-room has been planned to take care of expansion. For instance, the right wing could be duplicated to the left of the dining-room, and one side used ex-

# COUNTY TUBERCULOSIS CAMP



RIGHT END ELEVATION

PLAN SUGGESTED BY BUREAU OF TUBERCULOSIS, N.C. STATE BOARD OF HEALTH, SANATORIUM, N.C. FOR A SMALL COUNTY SANATORIUM

clusively for male patients and the other side for female patients; or one wing could be used for white and the other for colored patients, in which event an additional dining-room of the same size is recommended. The kitchen will supply both dining-rooms. The dining-room and kitchen, as shown in the plan, can be built for \$1,750.

It is proposed to heat the main building and the dining-room by an Arcola heater located in the men's dressing-room. Pipes could be run from the heater to various parts of the building, and will furnish sufficient heat. It is suggested that the heater be placed in the men's dressing-room in order that the male patients may attend to making fires, etc.



## SOME SUGGESTIONS FOR LOCAL PROGRAMS

By R. B. WILSON

(Read at the annual meeting of the North Carolina Tuberculosis Association, Goldsboro, October 3, 1922)

In the beginning I wish to lay down two fundamental propositions which I believe to be incontrovertible.

First, in North Carolina no successful campaign for money can be conducted except on the basis of a definite need.

Second, in North Carolina any public need will be adequately financed if that need is properly presented to the people.

On the basis of these two propositions it is obvious that if the approaching Tuberculosis Christmas Seal sale is to be successful in this State the people generally must know why the money so derived is needed, and for what purposes it will be spent.

It has been almost a fixed habit in most communities of the State for the past ten years merely to sell seals. The returns in nearly all cases have been meagre. May I suggest that this year we sell programs. If that be intelligently done, the financial returns will be commensurate with our needs. For the faith that is within me, I call your attention to the splendid records that have been made by the cities of Greensboro and Winston-Salem during the past three years.

Now what do I mean by selling programs? Merely this. Let the organization in each community do three things: (1) Find out what is most needed for the promotion of the campaign for the eradication and prevention of tuberculosis in the community; (2) Decide upon the items of work tending to accomplish this end that are to be attempted during the ensuing year; (3) Estimate as accurately as possible the cost of such work.

With this preliminary work done the local committee is in a position to place before the people of the community definite facts, and to ask for a definite amount of money. With such a foundation the solicitors can approach Mr. Leading Citizen and ask for a contribution of \$100.00,

or more or less as may appear advisable, instead of approaching him with the plea that he purchase some Christmas seals. Give him a bond or seals of course, but use these as a receipt for the money contributed, and not primarily as articles of merchandise to be sold.

With these generalities out of the way I desire to offer a few suggestions for local programs in North Carolina communities.

First of all, it is of vital importance that knowledge be gained of local conditions. In thirty counties of the State there are now being maintained whole-time health departments. In a number of other counties there are employed public health nurses. In many industrial communities are employed industrial nurses and welfare workers. In all counties there is a public welfare officer. Call upon these for information regarding the special local needs and find out something of the local prevalence of tuberculosis. In harmony with these workers formulate a program that will fit into work already under way.

Of fundamental importance is work among children, and I offer the establishment of the Modern Health Crusade as the first suggestion for a local program. This is inexpensive, the only two things necessary being the sympathetic coöperation of the teachers and the purchase of necessary supplies. May I add that this course, which makes a game of acquiring health habits, should be in every school of the county. It is endorsed in this State by the State Department of Education, the State Department of Health, and by nearly all of the county superintendents of schools. Those most enthusiastic about it are those in whose schools it has been conducted. It is one of the easiest of the things that can be done, and I believe the most important.

Second only in importance to the Modern Health Crusade I offer the nutrition class. This is more diffi-

cult and more expensive, but amply repays in results achieved. For the successful operation of a nutrition class scales are needed, and milk must be supplied to those children unable to provide it for themselves. The cost will vary of course with the size of the community. May I add that this also should be carried to the rural schools and not confined to the schools of the city or town. Though it may be expensive, in my opinion no local committee can make a mistake in going the limit on this phase of work.

The third suggestion that I have to offer is financial assistance in the employment of a public health nurse. There is now available in North Carolina by virtue of the Shepherd Towner Act funds for the employment of such nurses to be engaged on items of maternity and infant hygiene. An arrangement can be made whereby such nurses will devote a definite percentage of their time and effort towards tuberculosis. In those counties where the county commissioners are not yet ready to make an appropriation of public funds on a fifty-fifty basis with the

State for the services of such a nurse an opportunity is offered to the local tuberculosis committee to finance such a piece of work for a year, or two years, thereby demonstrating its worth and paving the way for transferring it to the public funds where it belongs.

Last there is material relief, which is usually first in this State. Supplying sleeping porches, reclining chairs, sputum cups, proper clothing for staying out of doors, and necessary food are all items under this head with which I am sure you are familiar.

I have not mentioned the holding of clinics for the detection of incipient cases of tuberculosis, nor any general educational work. Both of these are a part of the general State program, carried on without cost to the local community other than the percentage derived from the sale of seals. The only point that I have desired to make is that in your own home community you carefully decide upon what you will undertake, and that you sell this home program to your home people. It can be done.



**BUY TUBERCULOSIS CHRISTMAS SEALS**

## "TEACHING HEALTH HABITS IN DAVIDSON COUNTY"

By D. R. PERRY, M. D., County Health Officer, Lexington

(Read before the second annual Conference on Tuberculosis, Goldsboro, October 3, 1922)

Teaching health habits in Davidson County was a very uncertain and unreliable manner of getting the facts to the children, getting the teachers to cooperate, and for the health department to know what was really going on until about twelve months ago when it was decided to introduce into as many schools as possible and to reach as many schools as possible with the methods put out through the program of the Health Crusade literature, furnished by the North Carolina Tuberculosis Association at a cost of about four cents per child, for about eighteen hundred children.

This was taken up with the chairman of the local Tuberculosis Christmas Seal Sale Committee of Thomasville and Lexington, and funds were received from that source, including small amounts from the superintendents of different manufacturing concerns. They so gladly responded to the requests of the health department that we at once decided these eighteen hundred children would get a chance to take advantage of this work.

It was then explained to the teachers, who were very enthusiastic and cooperated to the fullest extent. It appeared that it was the very thing they wanted in order to reach the child, and, through the child, the home.

Following this, it was taken up with the children, who were the most enthusiastic of all. It was told to them as outlined in the manual for teachers, superintendents, and health workers, in an attractive way, and in a way that the child could easily understand, explaining the end results. It was also explained to the children that the whole idea was a little game of life against death, and by observing the simple rules laid down in the eleven health chores that it was their protection against disease and the prolongation of life. Our difficulty arose only when the child reached home, told his parents what was asked of him as a child and what was asked of the parents in the home. Some objected to each of the chores—frivolous, of course, but they had to be met. Some of them were met and explained by the

### DAILY CHORES

1. I washed my hands before each meal today.
2. I washed my face, ears and neck, and I cleaned my fingernails.
3. I kept fingers, pencils and everything likely to be unclean or injurious out of my mouth and nose.
4. I brushed my teeth thoroughly after breakfast and after the evening meal.
5. I took ten or more slow, deep breaths of fresh air. I protected others if I spit, coughed or sneezed.
6. I played outdoors or with windows open more than thirty minutes. I tried hard to sit and stand straight.
7. I was in bed ten hours or more last night, and kept my windows open.
8. I drank four glasses of water, drinking some before each meal, and drank no tea, coffee nor any injurious drinks.
9. I tried to eat slowly, and only wholesome food including milk, vegetables, fruit. I went to toilet at regular time.
10. I tried hard to keep neat; to be cheerful, straightforward and clean-minded; and to be helpful to others.
11. I took a full bath on each day of the week that is checked (x).

children, and some were brought back to the school and explained by the teacher. Some, of course, were transferred to the nurse, and from there to the health officer, who had to explain and counteract their objections.

In the Standard Chore Record, which was used altogether, Chore No. 1 was objected to because it required too much time and too much soap to wash their hands before each meal. This was promptly met by the child and in a few cases by the teacher.

Chore No. 2 was the same. But you would be surprised to know the number of faces, ears and necks that were washed, and they really cleaned and trimmed their finger nails—things that were unknown by many children, as a routine each day.

The whole idea was, that it was written down, they had a check mark to make, and the teacher said it should be done. I would like to state right here that the whole success of the thing depends upon the teacher. At least, that was our experience. Also, the nurse advised them that it was the thing to do. It was in the local paper, and advised through that source that it was the thing to do, and we had no trouble, except when the parents objected, and never over one or two cases in a school. Except, for instance, an old, mean, husky boy, who never did what anybody wanted him to do, would object. But in a few weeks he fell in line, because the rest of the children kept after him so much about his dirty face, neck and finger nails that he was won over.

Lots of stress was laid on Chore No. 3, especially among the younger children, when they were swapping pencils, chewing gum, biting their finger nails, and such habits, because this one chore was the secret of the scarlet-fever and diphtheria contagion, and anything else that a child might have, it was explained, might be transferred in this manner by him to other members of his class. Also the individual drinking cup was stressed here.

In Chore No. 4 we were very successful in getting the children to brush their teeth after the morning and evening meal, by daily inspection by the teacher, same as was done in Chores 1, 2, and 3. We introduced in the schools a small tooth-brush, very inexpensive. We also gave to the children tooth-paste that was furnished the teachers through the

health department by the manufacturing concerns. The tooth-brush referred to was handled through the local drug stores and was sold for seven cents apiece, or seventy-five cents per dozen. This brush was shown and its use demonstrated to the children, and samples left with the teachers.

Chore No. 5 was carried out in the setting-up exercises, and the show of handkerchiefs was always asked. On our first visit to the schools about five per cent had handkerchiefs. In a week's time the entire school had handkerchiefs to protect themselves and others when they coughed and sneezed.

We explained to them Chore No. 6, about the stoop-shoulders, flat-chests, etc., and asked them always to sit and stand straight, showing the children the cause of incorrect posture. That chore was very easily complied with.

Now, as to Chore No. 7, we were well pleased when reports came in from some of the parents who had been having much difficulty in getting their children to bed early and getting in the ten hours or more sleep. It was very encouraging on their part, and lots of the parents expressed themselves as one man did, that it had been worth all the trouble and had really meant so much that his child was now getting ten hours sleep since she had joined the Health Crusade. Prior to the Health Crusade, she had gone to bed with him and gotten up with him, and was twenty pounds under weight. At the end of the crusade period she was normal in weight and a healthy girl, and all the credit was given to Chore No. 7.

In the latter part of this chore—"keeping of windows open at night"—we found much trouble. They were afraid of "hants" or something on the outside. It was explained to them that the "hants" were on the inside, and the fresh air and sunshine could come in and drive the "hants" out. The results were very satisfactory toward the end.

In Chore No. 8 we only had difficulty with the coffee drinkers, and in some cases this habit was never given up by the children. Of course, we had Coca-Cola and tea to contend with, but not to such a large extent. We were surprised to see how this spread through the schools—even in the grades that the crusade were not used in. The remarks would come from the teacher of other grades in



the school that the children had stopped drinking coffee, and when the reason was asked, the reply was that the health department and teacher said it was injurious to the health of children, and they gladly gave it up. At times, with this chore, we would find much difficulty, but we would take out a pale, yellow, anæmic coffee drinker, and a healthy, robust milk-drinker, and point out the difference, in order that the children might visualize the evil effects of coffee.

Chore No. 9 was handled only at lunch-time, by the teacher having each child remain at his desk and eat his lunch slowly and comply with this chore. It was gratifying to see the number of milk bottles in schools, the children bringing milk with their lunch.

In Chore No. 10 the appearance of the children in a very short time was satisfactory to all concerned. They kept their clothes neat, and shoes shined. Naturally, they felt good, they were cheerful, and could begin to see the benefits of the work. They were always in a receptive mood for any suggestions that might be offered them by the nurse or the teacher.

Chore No. 11, which required a bath at least twice a week, was complied with very readily after it was started. It was found that some of the children never bathe the entire body, except in summer, and this was accomplished in the swimming-hole or some near-by creek. After this chore was begun, the children saw that they would not take cold, as they had been taught by their parents, and they began to bathe every night. At least, that is the report brought to school. Upon inspection, it was found their bodies were much cleaner.

Up to this time, it had been hard for many of the parents to under-

stand the workings and necessity of a health department. They did not know what the nurse was for. We found, through the Health Crusade, that the antagonistic idea they had in regard to the department had disappeared, and we have had their hearty support from then until now in anything that was introduced or asked of them for the benefit of their own family and community, from a sanitary and hygienic standpoint.

At the time the Health Crusade began in the cities of Lexington and Thomasville we only had one nurse, a county public-health nurse, paid out of the county budget for health work. In the spring, during the period of the Health Crusade in the schools, there was such a demand for the nurse that all she did for about ten weeks was to instruct, weigh, measure, and assist the teachers in conducting this crusade among the eighteen hundred school-children. The good work she did was instrumental in putting over, through the citizens of Thomasville and Lexington, a community nurse in each place, who has not only to do with the work of the Health Crusade in these schools, but she is a tuberculosis nurse, industrial nurse, public-health nurse, and Metropolitan Life Insurance nurse, and the county public-health nurse is placed out in the county where she is doing public-health nursing in the country districts entirely. We are hoping this school year that the Health Crusade will be more thoroughly and satisfactorily worked even than last year. We are sure of the co-operation in the schools in which the crusade was introduced last year. Our plans at present are to reach about one-half the total enrollment this year, which will mean about four thousand Health Crusaders in Davidson County by April, 1923.

**BUY TUBERCULOSIS CHRISTMAS SEALS**

## HOW COUNTIES MAY SECURE FUNDS TO ERECT COUNTY SANATORIA

(From the Public Laws of North Carolina)

**7279. Power to Establish.** Any county within the State shall have power and authority at any time to establish, erect, and maintain a hospital for the care and treatment of persons suffering with the disease known as tuberculosis, as hereinafter provided in this article.

1917, c. 99, s. 1.

**7280. Election for Bond Issue; Special Tax.** The board of county commissioners of any county in the State may, by majority vote of the board, or upon petition of one-fourth of the freeholders of the county, shall, after thirty days' notice at the courthouse door and publication in one or more newspapers published in the county, order an election to be held at the next general election, or order a special election to be held at such time as they may fix, to determine the will of the people of the county whether there shall be issued and sold bonds to an amount not to exceed one hundred thousand dollars, to bear interest at such rate as the board may fix and to be payable, both principal and interest, when and where they may decide. The proceeds of the bonds to be used in securing lands and erecting or altering buildings and equipping same, to be used as a hospital for the treatment of tuberculosis. If the majority of the qualified voters at said election shall vote in favor of the issuing of such bonds, then the bonds shall be issued and sold by the board and a special tax shall be levied to pay the interest and to provide a sinking fund to pay the bonds at maturity. The board of commissioners are also authorized to levy a special annual tax not to exceed five cents on the one hundred dollars valuation of property and fifteen cents on the poll to be used as a maintenance fund for the hospital for tuberculosis. The question of levying such special tax shall be submitted to the qualified voters of such county at an election to be held as hereinbefore provided.

1917, c. 99, s. 2; 1919, c. 159, s. 2.

**7281. Manner of Holding Election.** The county commissioners at the next

general election or special election shall cause to be placed at each voting precinct in the county a ballot box marked "County Tuberculosis Hospital," and cause to be printed and distributed official ballots labeled "For County Tuberculosis Hospital," and official ballots labeled "Against County Tuberculosis Hospital," said election to be governed by the laws of the State. The county commissioners shall, if they propose to levy the tax for a maintenance fund as hereinbefore provided, also cause to be placed at each voting precinct in the county a ballot box marked "Maintenance of County Tuberculosis Hospital," and cause to be printed and distributed official ballots labeled "For Maintenance of County Tuberculosis Hospital" and official ballots labeled "Against Maintenance of County Tuberculosis Hospital," such election to be held as hereinbefore provided.

1917, c. 99, s. 3; 1919, c. 159, s. 3.

**7282. Board of Managers; Term of Office; Compensation.** For each hospital so established the board of county commissioners shall, by a majority vote, elect a board of managers consisting of five members, who shall hold office for the term of five years, unless sooner removed for cause by the board of county commissioners: Provided, that at the first election of a board of managers one member shall be elected for the term of one year, one member for the term of two years, one member for the term of three years, one member for the term of four years, and one member for the term of five years: Provided, also, that any vacancies in such board may be filled by the board of county commissioners for the unexpired term. In all counties having a health officer, such health officer shall, in addition to the five elected members, be ex officio a member of such board of managers. Women shall be eligible for election to such boards of managers. The compensation for such board shall be the same as that of the county commissioners.

1917, c. 99, s. 4.

**7283. Powers of Board; Title to Property.** Authority in regard to the purchase of lands, erection and maintenance of buildings, selection of officers, employees, and attendants, formulation of rules and regulations for the admission and government of patients, and general conduct of the hospital, shall vest in the board of managers. No one related by blood or marriage to any member of the board of managers shall be appointed to any office or position in connection with the hospital, except by unanimous vote of the board of managers. All property, both real and personal, pertaining to such hospital, shall be vested in the county: Provided, however, that any donations, bequests, or devises made for the use of such hospital shall be held by the county in trust according to the terms of such donation, devise, or bequest.

1917, c. 99, s. 5.

**7284. Contract Power; Regulations for Admission.** The board of county commissioners, or the board of managers, according to the authority vested in them by the board of county commissioners or by this article, shall have power and authority to purchase property, both real and personal, to make contracts, to formulate, change, and alter rules and regulations for the admission and government of patients, and to do all things reasonably incidental or necessary to carry out the true intent and purpose of this article. Patients may be admitted and kept without charge or for such compensation as may be deemed just and proper in each particular case: Provided, that no person who is not a bona fide resident of the county maintaining such hospital shall be kept for less than actual cost. The county commissioners of any county may, instead of erecting the institution in the county where the vote is taken, use a part or all of the funds in erecting and maintaining a building or buildings at the State sanatorium at Montrose, or the county commissioners may in their discretion erect and maintain a tuberculosis hospital in the county where the bonds are issued, and may also use part of the funds to erect and maintain a building or buildings at Montrose, as they may deem best. Before erecting any building or buildings at Montrose the county commissioners shall make due arrangements and enter into the necessary contract

or contracts with the board having charge of the State sanatorium at Montrose and the board having in charge the State sanatorium at Montrose is hereby authorized and empowered to make contracts with any county in the State, specifying the terms upon which such building or buildings may be erected and making such arrangements as it may deem wise for the maintenance of such buildings and the care and support of such county patients. In case the county commissioners of any county or the people of any county do not decide to issue bonds for the erection of such hospital, but do decide to levy the special tax hereinbefore provided for, or the county commissioners of any county wish to use the necessary funds from the general fund of the county, they may in either case make arrangements with the board having in charge the State sanatorium at Montrose for the maintenance and care of tuberculosis patients of such county.

1917, c. 99, s. 6; 1919, c. 159, s. 3.

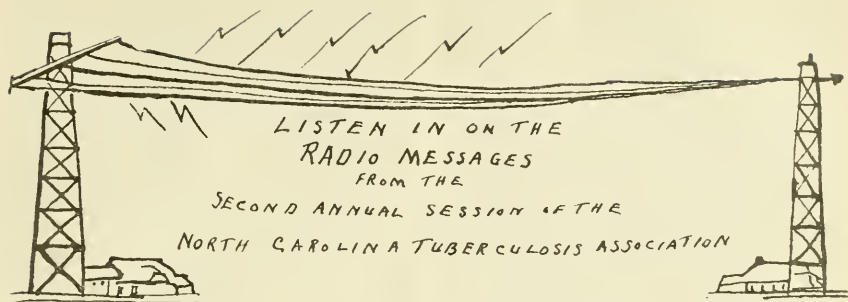
**Erection and Maintenance.** That section three of chapter one hundred and fifty-nine of the Public Laws of nineteen hundred and nineteen be and the same is hereby amended by adding after the last proviso therein the following: "Provided further, that the board of county commissioners of any county in the State may, out of the general funds of the county, provide for either the erection or maintenance in said county of a county tuberculosis hospital."

1921, c. 178, s. 1.

**7277. Plans for County and Municipal Tuberculosis Sanatoria.** Any county or town desiring to erect a sanatorium or hospital, shack, tent, or other structure in which it is intended to keep persons suffering with tuberculosis shall first submit to the State Board of Health for its approval or rejection the plans of said sanatorium, hospital, shack, tent, or other structure, and it shall be unlawful for any county or town to begin the erection of any such structure referred to above without the consent or approval of the State Board of Health.

Any person, firm, or corporation failing, neglecting, or refusing to comply with the provisions of this part of this article shall be guilty of a misdemeanor, and upon conviction shall be fined or imprisoned, in the discretion of the court.

1917, c. 216, ss. 1, 2.



Every person in North Carolina who has tuberculosis has a right to know it, to be properly treated for it and to be so supervised that he will not communicate the disease to others.

(Dr. L. B. McBrayer)

\* \* \*

It is only by the co-operation of everybody, the medical profession and the laity, that we shall get a grip on tuberculosis.

(Dr. Allen K. Krause)

\* \* \*

We are making very substantial and I believe, rapid progress in the solution of this great problem of tuberculosis.

(Dr. J. Howell Way)

\* \* \*

The diagnosis of tuberculosis in its incipency is a great problem today, and the people are soon going to demand that it be made. Whole families are coming to us wanting to know if they have tuberculosis. You can see the handwriting on the wall. We as physicians must deliver the goods. Great work is being accomplished, and a great many of these people who are returning from the Sanatorium are doing very effective work here in Goldsboro and throughout the State, and I feel that the public should know this. The medical profession is solidly and firmly in the Crusade to clear North Carolina of this scourge of disease.

(Dr. C. F. Strosnider)

\* \* \*

Dr. Chas. L. Minor wired us from Maine suggesting the following as a motto for the North Carolina Tuberculosis Association and others interested in the prevention of tuberculosis in our State: "No preventable tuberculosis in North Carolina."

\* \* \*

Tuberculosis is not such a mysterious problem that the average general practitioner, if he makes a care-

ful physical examination and goes carefully into the case, cannot find it.

(Dr. P. P. McCain)

\* \* \*

The next generation of doctors will diagnose tuberculosis in its incipency and when that is done the majority of cases will be restored to their former functions in life.

(Dr. J. Howell Way)

\* \* \*

As to its being imperative to have some special man to work out special problems in tuberculosis, I want to say this—the doctor always rises to the emergency, and I have yet to know of the first county or city or community that put up the money that did not develop the man. Men grow, and there is no man or woman on the face of this earth that has more capacity to grow, to measure up to the needs of the occasion than have the men and women of this great State of North Carolina, and the doctors always do it.

(Dr. J. Howell Way)

\* \* \*

Flat X-ray plates are of no use in the diagnosis of pulmonary tuberculosis. It takes the stereoscopic pair to enable one to see tuberculosis.

(Dr. P. P. McCain)

\* \* \*

X-ray therapy relieves the pain in tuberculosis of the larynx. We are using it to great advantage in these cases at the Sanatorium.

(Dr. P. P. McCain)

\* \* \*

The average man or woman who goes to the doctor in general practice in regard to his chest has an attitude of suppressed, if not manifest resentment if the doctor suggests the existence of pulmonary tuberculosis in that individual. There is, back in the mind of the average patient the thought that it is a disgrace



to have tuberculosis, and it doesn't run in his family, therefore "I haven't got it." If the doctor suggests it or intimates it, not infrequently that patient will go to some other doctor and introduce the consultation with a statement to the effect that "Dr. So-and-so has been my family physician for a long time and we think a great deal of him, and I went to see him last week and he actually tried to make me think that I had tuberculosis, and I just want you to give me a thorough examination and make sure that I am all right." Doctors are just human beings and sometimes our patients just forcibly make us acquiesce in the kind of verdict they want us to bring in. The general practitioners have all had that experience. They have repeatedly lost patients on that account. The people, however, are being taught by the North Carolina Tuberculosis Association, by the State Board of Health, by physicians and by many patients the importance of early diagnosis in tuberculosis and they will no doubt assume a different attitude in the near future.

(Dr. J. Howell Way)

\* \* \*

The progressive health program in North Carolina is being favorably commented upon throughout the United States. Certainly everybody knows where the North Carolina State Sanatorium has been put in the last few years under able directorship. We are also familiar with the work of the State Board of Health, and I believe that my friend Dr. Way paid none too high a tribute to the work of your State Health Officer. Asheville commands a position that is unique in tuberculosis work in the United States.

North Carolina, it seems to me, must take its place, in time, as the health resort of the United States particularly for the tuberculous. Today it is certainly the health resort east of the Rockies, so far as climatic and atmospheric advantages, advantages of soil, etc., are concerned. Here you are, between the north and the south. You have an equable climate. You have not the extremes of heat so enervating to the tuberculous patient, and you have not the extreme cold that saps his strength, particularly after he has passed the first stages. You have miles and miles of pine forest. You are within easy reach of three-fourths of the population of the United States.

These factors will, in time, introduce problems. More and more people will come to North Carolina, and you should welcome them. More and more people of tuberculous antecedents will settle in North Carolina. Their parents and grandparents have come here and settled in the State, and many of them have put a little capital here. You will have more and more a basically tuberculous population, just as Colorado has, and as New Mexico and Arizona have. They come from all over the United States, often the very best people, often the very ablest people.

At the same time, as I understand it, you are on the verge of a great industrial awakening. The whole trend of things is for the lead of New England to be transferred to North Carolina. That is already beginning and will be complete in time, and then, instead of having largely agricultural problems and problems of the lumber camp, you will have the factory problem here more than you have ever had it before, and it will introduce new problems in the prevention of tuberculosis and in the prevention of infection.

(Dr. Allen K. Krause)

\* \* \*

Public sentiment is now at last, after long years, beginning to realize that the duty of taking care of the physically weak, the sick, the disabled, the diseased, is not the function of the individual doctor, who the State over, the nation over, the world over, is the highest taxed man in the community. I say taxed in the sense that he pays taxes on whatever property he may happen to have, but in addition he is taxed willingly or unwillingly at least fifty per cent of his income in caring medically for those unable to pay. This is wrong. This duty devolves upon all the people.

(Dr. J. Howell Way)

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We are met here to consider one of the greatest problems that we have to deal with, a problem which, if it could be successfully solved, would save North Carolina more than she is spending on her entire educational system every year, a problem the successful solution of which would save North Carolina more than she is spending on her tremendous state-wide road-building program. It is a problem the largeness of which you can begin to conceive by comparing it, in the burden it imposes on life, with our losses

during the recent war. To the right of me are portrayed forty-four men who gave their lives in settling the issue as to whether the common man—all of us—should have the right to a voice in his government, or whether the government should be in the hands of a few. But every year in this great battle of life and death, in the battle between intelligence and ignorance, between sanitary and insanitary conditions, we lose, you lose down here in Wayne County, not forty-four lives, but four times forty-four lives, year in and year out.

We are met, then, to consider a great problem, one that has been with us so long that we have become, in a sense, narcotized, habituated to it, so that we pass it by as something ordinary, something that the gods have imposed upon us and something that we have no concern or responsibility for. As Dr. Osler said—and I always think of those words of Osler's in portraying the tuberculosis problem: "In four hundred homes there is lamentation tonight, husbands for their wives, wives for their husbands, parents for their children, children for their parents. A mere repetition of yesterday's toll, and if your ears be open you can hear the wangs of those gathering for tomorrow's."

It is one of those great burdens which we have accepted as the penalty for our sins, but it is a problem which we are ultimately to solve and which we have been solving—the great problem of tuberculosis, the "great white plague," the greatest single disease with which man has to grapple. (Dr. W. S. Rankin)

\* \* \*

I have tried to point out how we probably take the germ of tuberculosis into our bodies. We inhale it, undoubtedly; we eat it, undoubtedly; we get it in other ways, either through the mouth or through the nose, or in both ways. We get it, no doubt in milk; in the dust we breathe; we get it, no doubt, by having people cough upon us and sneeze upon us, or by their talking or laughing loudly in our direction. That is, droplets are sprayed out—saliva—in which, of course, exist the bacilli which have come from the deeper portions of the breathing apparatus. But we always get it from a dirty source, and always from a source which has tuberculosis. If we get it through the dust in the streets or in

the homes, we get it from material that has been sputum once, which has been put out thoughtlessly by people who have had the disease.

(Dr. Allen K. Krause)

\* \* \*

There are thousands of families in which there is tuberculosis in the breadwinner, or tuberculosis in the mother, which means that more people have to come into the home to maintain it. When the tuberculosis began they had two or three rooms, and gradually have come down to one, gradually going back, back, back to rooms that are airless, rooms practically without light, no matter what the tenement laws are. The tenement laws usually are for the future. Every function of the household is being performed in that one room. The bed of the patient, every bit of furniture in the room, the walls, the floor, all cooking utensils, everything one handles in the home, and the three or four children crawling around on the floor, all are being infected with the virulent bacilli from the patient. The consumptive is practically hopeless, and does not care any more, and is coughing and spitting promiscuously. There is a third type of opportunity for infection. You have every gradation from the reception of one bacillus, say, to the reception of millions and billions day after day, and the result will appear differently. We can lay it down as a rule that, everything else being equal, the more bacilli taken in by a human being, at whatever age, the oftener the episodes of the reception of bacilli are repeated, and the more closely together these episodes occur, the more likely will the case be active than latent.

(Dr. Allen K. Krause)

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Cattle with tuberculosis can communicate the disease through their milk to the human, and especially children.

(Dr. Allen K. Krause and Dr. Wm. Moore)

\* \* \*

We have the greatest old State there is in the Union and she is getting greater every day. She has become known far and wide over this great country of ours—her climate, her resources, everything. One thing we are known for unquestionably is the fact that we are the greatest spitting State in the United States. We have the most expert spitters in North Carolina that this grand country can

produce. I know some folks who can hit a knothole in the floor twenty feet away. I am not speaking of you ladies—you are too decent; I am speaking of men. We spit everywhere. We have gotten used to spitting in the courthouse, in the drug store and everywhere else, and all over each other. I got on the train not so long ago up at Greensboro on my way to High Point. The coach had just been cleaned up and dusted so clean and I am ashamed to tell the condition of the coach when I got out at High Point—besides trash and such like there were three pools of tobacco spit, maybe containing tubercle bacilli. And yet we men in North Carolina have been criticising some of the ladies about the length of the skirts they wear. Now, I want to say to you ladies right here and now, until the men in North Carolina stop spitting tobacco juice everywhere you have to go, you wear your clothes to suit yourselves, as it is a much healthier way for all concerned. I am frank enough to say, however, that under the present existing styles there is very little danger of contamination. (Dr. J. L. Spruill)

\* \* \*

One thing we can do to limit infection with the tubercle bacillus, into which we have not gone with all the ardor and vigor we can, and that is remove the eternal menace of sputum, which is spat out everywhere and which gives our children not only tuberculosis, but diphtheria and other diseases. That will be controlled not so much by law as by eternally keeping at it, with a sound public opinion behind us. People say, "Well, what are you going to do when you have to spit?" I say, "Well, women do not spit on the street." In China and Japan micturition and defecation on the street are common, but we have advanced a little farther than that. It is simply a matter of emerging from barbarism. (Dr. Allen K. Krause)

\* \* \*

I just want to say that there is a great ray of hope to us through the Modern Health Crusade. It will probably never be possible to get the older people to quit the hawking and spitting they have been doing all their lives, but we can teach the children to take the precautions that they should. (Dr. P. P. McCain)

\* \* \*

I may say, for the interest of the audience, that it was the pleasure

and opportunity and the duty of the North Carolina State Board of Health, at one of its sessions several years ago, to go on record to the effect that in their judgment the time had arrived for the State to provide means for the treatment of the colored people suffering from tuberculosis. Later on it was the pleasure of the General Assembly to make an appropriation of \$100,000 for a building at the State Sanatorium which will, I understand, be opened about next May.

(Dr. J. Howell Way)

\* \* \*

At the conclusion of a most interesting paper on The Tuberculous Delinquent by Mr. Wiley B. Sanders, Executive Secretary of the State Conference for Social Workers, the following resolutions were presented and unanimously adopted:

1. That all sentenced prisoners shall be under the control of the State of North Carolina.

2. That no municipal or county jail be used except as a place of detention for those awaiting trial.

3. That the present law in regard to the physical examination of all prisoners by the county health authority within forty-eight hours after commitment, be strictly enforced by the State Board of Health.

4. That the State Board of Health furnish to the respective county health authorities forms for the physical examination of prisoners, and that such forms shall be filled out by the county health authorities on every prisoner committed to any county or municipal jail or road camp whatsoever, and that said forms shall be mailed to the State Board of Health.

5. That the Board of Directors of the State's Prison establish a colony for tuberculous prisoners on the State Prison Farm, and transfer to said colony all tuberculous delinquents now confined in the tubercular ward of the State Prison.

6. That the sheriffs of the respective counties of the State shall send to the said proposed colony for tuberculous delinquents all county or municipal prisoners under sentences of three months or more, who have been diagnosed by the county health authority or the State Board of Health as being affected with tuberculosis.

7. That said tuberculous prisoners shall remain in the colony until cured, or until the expiration of their



sentence; and, if any tuberculous prisoner shall be pronounced cured before the expiration of his sentence, he shall be turned over to the Supervisor of the State Prison Farm for such work as he may be able and fitted to do.

8. That the State Board of Charities and Public Welfare shall maintain strict and frequent inspection of all county jails to see that they are kept in a clean and sanitary condition, and do not become breeding places of disease, provided this inspection shall in no way supercede or interfere with the law requiring inspection of jails, prisons, convict camps, etc.

\* \* \*

No matter what particular phase of the health field we are considering, in the last analysis we come to the fundamental fact that progress depends upon the personal hygiene of the individual, his food, his health habits, etc. (Dr. L. Emmett Holt)

\* \* \*

Miss Edith M. Thomas, Supervisor Home Economics, State Department of Education, Raleigh, told us of the co-operation of the Home Economics teachers and classes in the high schools throughout the State in the fight against tuberculosis, particularly with the undernourished children in the nutrition classes. This is and will be of increasing value to our people. You will not call on these Home Economics people in vain.

\* \* \*

Over in New Hanover County where the public health nurse examined and weighed the children, the home demonstration agent prescribed the diet. They worked together. (Miss Edith M. Thomas)

\* \* \*

Josephus Daniels said a woman worth \$150,000 told him she was astounded when a physician told her she was starving her children to death. All such people need is to be told and shown the way. The nutrition class will do this.

We want our boys and girls to be assets to the State of North Carolina and if the women feed them properly, have them sleep with the windows open, teach them the right food habits and living habits, they will keep well and we shall have a happy, prosperous State.

(Miss Edith M. Thomas)

\* \* \*

The Tuberculosis Christmas Seal is an institution and is therefore a permanency. The people want their Christmas seals just as a baby wants its milk.

(Dr. L. B. McBrayer)

\* \* \*

The National Tuberculosis Association is the one great volunteer health organization whose thorough organization extends to every State in the Union, every county and every town.

It is the one and only National volunteer organization devoted to the fight against tuberculosis.

It counts among its membership every scientific work in any phase of the tuberculosis problem.

It has, on request, rendered great service to the government, both in times of war and in times of peace, in advising it in regard to the handling of its tuberculosis problem.

It helped the foreign nations during and since the war in their tuberculosis problems.

It is, through its committees and in every way possible, constantly conducting research in regard to the transmission of tuberculosis; in regard to the improvement of diagnostic methods; in regard to the treatment of tuberculosis, etc., etc.

It has, with its allies—State and local health departments, State and local tuberculosis associations, etc.—reduced the death rate from tuberculosis in the last 20 years nearly 50 per cent.

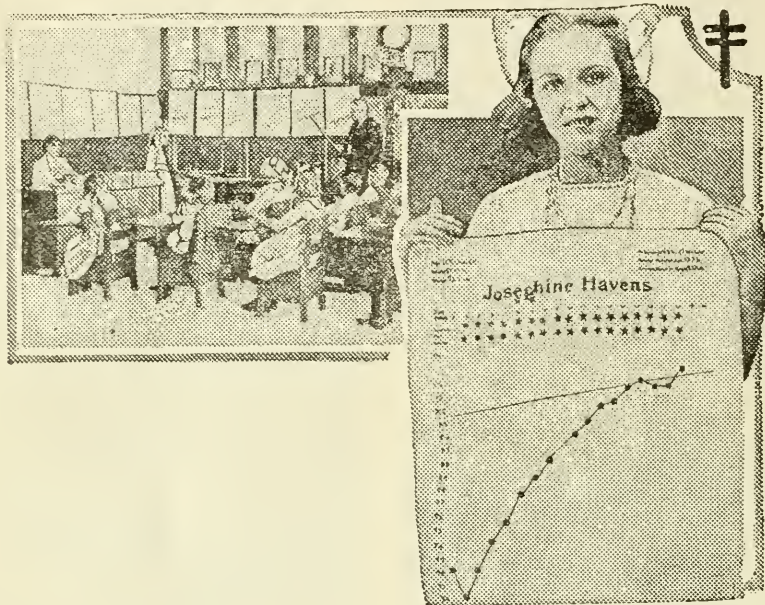
It receives its support from the sale of Tuberculosis Christmas Seals. No community chest nor other thing can afford to interfere with this sale.

(Dr. L. B. McBrayer)

**BUY TUBERCULOSIS CHRISTMAS SEALS**



## PROPER NUTRITION IN CHILDHOOD PREVENTS TUBERCULOSIS IN ADULT LIFE



It is only in recent years—the time might almost be calculated in months—that the subject of proper nutrition for growing boys and girls has received the attention that the importance of the subject warrants.

It is now an accepted fact that a large majority of cases of tuberculosis that develop in adult life are the result of childhood infection. Growing boys and girls are especially susceptible to the tubercle bacillus and unless they are well nourished and thus have surplus resistance an infection is almost a foregone conclusion.

Through the Modern Health Crusade and the Nutrition Crusade the North Carolina Tuberculosis Association has a medium of incalculable value for teaching health habits to

the children and to aid them in reaching their standard weight.

The illustration above shows the steady and rapid gain in weight made by Josephine Havens after she had enrolled in the Nutrition Crusade. She was eleven pounds underweight when enrolled and reached the normal weight for her height and age in just thirteen weeks.

Over thirty per cent of the school children in North Carolina are underweight and are therefore especially susceptible to infectious diseases. The majority of these children can become properly nourished by doing the health and nutrition chores.

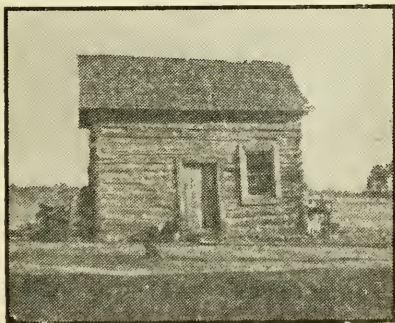
This method of teaching health to the children is endorsed by the State Department of Education, the State Board of Health and all the County Health Officers.

### BUY TUBERCULOSIS CHRISTMAS SEALS



**Clean Milk is the Most Important Item of Food. Drink Some, and Then Drink Some More, With Each Meal**

### STATEMENT



picture car for negroes. Dr. Ransom stated that this home was in Pender County. We had every reason to believe him and we are now quite sure that he was honest in his statement.

After the Bulletin was published Mr. T. T. Murphy, Superintendent of Pender County Schools, Burgaw, N. C., wrote us stating that he did not think the building was in Pender County and that he would like for us to verify Dr. Ransom's statement. We asked Dr. Ransom to find the building and identify it when he went to Pender County again. He failed to do so. We are supposing therefore that the building was not in Pender County.

If Pender County's feelings are wounded in any way because of this unpleasant advertising, we are very sorry. We do know, however, that a great many tobacco barns have been made into residences in our State. The article in question was on pages 18 and 19 of the Bulletin referred to and was intended to show good homes and bad homes of the negro population in various parts of the State.

In the Health Bulletin for November, 1921, for which we were responsible, we printed the picture that appears on this page of a converted tobacco barn, which was supposed to be used at the time the picture was taken as a residence for a family of negroes numbering seven. This picture was taken and turned over to us by Dr. E. T. Ransom, who was at that time in charge of our moving

L. B. McBRAYER,  
Managing Director,  
North Carolina Tuberculosis Asso.

## THE STATE ASSOCIATION

SOME OF THE THINGS IT IS DOING AGAINST TUBERCULOSIS

Last year in Greensboro the North Carolina Tuberculosis Association held its first Conference on Tuberculosis. Through its official spokesman the Association promised the people of North Carolina that if sufficient funds were provided over a period of years the Association, with the assistance of others engaged in like work, could and would stamp out tuberculosis. The Tuberculosis Association asked the people of the State to donate \$50,000.00 for this work. The people responded by giving \$42,652.75. Of this amount 75 per cent was used for the care and prevention of tuberculosis in the community in which it was raised. The remainder came to the State Association for use in the State and National campaigns against tuberculosis. The National Association received 10 per cent of the gross receipts, about half of which was used to purchase the seals and supplies. The 5 per cent remaining supports the National Tuberculosis Association. Without an efficient National Association the State and local associations would not be possible. Its work is imperative and the small percentage allowed is infinitesimal compared with the work accomplished.

The State Association uses the proportion allowed them to hold free tuberculosis diagnostic clinics, where anyone who is suspicious of a tuberculous infection may receive an examination by an expert without charge; to supply tuberculosis nurses in certain communities; to conduct an educational campaign among the negroes to the end that this menacing source of infection may be removed; for the conducting the Nutrition Program for undernourished children; for assisting counties to secure the erection of sanatoriums; for promoting tuberculosis public health work, and in an advisory capacity to all who are interested in tuberculosis problems.

At the Second Annual Conference in Goldsboro this year announcement was made that there were 2,641 deaths from tuberculosis in North Carolina last year. This is a saving of 290 lives over the previous year. It is therefore seen that the National,

State, and local Tuberculosis Associations have used the talents intrusted to them and that definite progress is being made. From a financial point of view the saving of these 290 lives has repaid many times the amount invested. Of considerable importance is the fact that every case of tuberculosis cured or arrested means a source of infection removed. It has been estimated that an active case of tuberculosis who is careless will infect at least ten others. Thus the intangible value of the Seal Sale with its accompanying educational program cannot be calculated in dollars and cents, but is measured in hundreds of homes in North Carolina by health and happiness where the Great White Plague has been barred by the vigilance of the guards in charge of the campaign.

The North Carolina Tuberculosis Association asks your continued support in the fight. Tuberculosis has been with us many thousands of years and we are just reaching the point where the light of hope is beginning to trickle through. It is trite to say that all cases of tuberculosis can be prevented and that most cases can be cured, yet such are the facts. Why then do we allow even 2,641 persons to die in North Carolina of a disease that can be prevented and approximately 20,000 to suffer from a curable disease? Is it because we are inhuman and callous or because we are not informed? North Carolina is rich, North Carolina has able leaders, but unless these riches are put to work and the leaders have followers to do their bidding the work is in vain. We need the "everlasting teamwork of every blooming soul" before we have a State free from the scourge of tuberculosis.

To those who have tuberculosis we will be glad to render any possible assistance, supplying you with instructions for your care and treatment and securing medical and material relief whenever possible. On those who are not ill with tuberculosis falls the privilege of rendering relief to those who are unable to secure treatment and attention for



themselves. This can be most efficiently done by purchasing Tuberculosis Christmas Seals. There are organized committees in all the principal towns to handle these funds, workers who are familiar with the needy tuberculous, and each Seal

you purchase will bring relief to some one of these.

The Seals should be used on Christmas letters and packages and thus carry a message to others that you believe in and are supporting the organized fight against tuberculosis.

## MODERN HEALTH CRUSADE AND NUTRITION CLASSES

IN 59 ODD FELLOWS ORPHANS HOMES THROUGHOUT THE UNITED STATES, TAKING CARE OF 5,000 CHILDREN

Realizing that the Modern Health Crusade was conceived in the desire to make children healthier, and realizing the great value it would be to the children in the Orphans Homes of the Order, Mrs. Hattie Reed Whitaker, President of the Association of Rebekah Assemblies, I. O. O. F., and vice-president of the North Carolina Tuberculosis Association, at the annual meeting of the Association in Detroit last September, made the following recommendations which were unanimously adopted:

Whereas, The great importance of forming right habits in children cannot be overestimated, and,

Whereas: Health habits come next to habits of honesty and morality, and,

Whereas: The Modern Health Crusade is one of the best methods for training children into proper health habits,

I Therefore Recommend, That the Association of Rebekah Assemblies takes upon itself, through the Rebekah State and Province Assemblies, the task of introducing the Modern Health Crusade and Nutrition Classes into every Orphans Home under the jurisdiction of Odd Fellowship;

Whereas: From studies made in many States, including my own, it is shown that 30 to 50 per cent of all children of school age are underweight for height and age, and,

Whereas: Underweight means undernourishment and this undernourishment and underweight is not always due to the lack of the proper amount, proper character, or proper

preparation of food, since it occurs in the wealthiest homes as well as in the hovel, and,

Whereas: Undernourishment may be due to disease or physical defects, and,

Whereas: It has been well proven by scientific students of nutrition that undernourishment lowers the resistance of the body to diseases such as diphtheria, typhoid fever and tuberculosis, and,

Whereas: It is most important that we as mothers and Rebekahs should protect the children in our Odd Fellows Homes,

I Therefore Recommend that the Association of Rebekah Assemblies should undertake, through the State and Province Assemblies, to have all the children in all the Orphans Homes under the jurisdiction of Odd Fellowship properly examined for diseases and physical defects and secure the correction of the same; also have these children examined (by keeping records of their age, weight and height) as to the degree of nutrition obtaining in each individual child and make such correction as may be needed in the food and health habits or in the food available for the children. This may be carried out in connection with the Modern Health Crusade. Information regarding either or both may be obtained from your State or Province Tuberculosis Association or from your State or Province Board of Health, or from the National Tuberculosis Association, 370 Seventh Ave., New York City.

**BUY TUBERCULOSIS CHRISTMAS SEALS**



## THROW OUT THE LIFELINE

There is hardly a county in North Carolina that does not have a number of cases of tuberculosis who are in destitute circumstances because of the disease. Tuberculosis Christmas Seals are sold to provide funds for the relief of these patients and to furnish treatment at the Sanatorium. We trust each and every reader of this Bulletin will purchase a generous number of the seals from the local chairman. If there is no tuberculosis organization in your town in charge of the Seal Sale, mail the coupon printed elsewhere in this Bulletin to headquarters, with your remittance, and the seals will be sent by return mail.

Reports have recently been received from all sections of the State of cases who need your help. We are citing a few that can be helped by seal funds, and there are many more:

### C----- County

A family of four—an invalid mother and three daughters. The mother is confined to bed and absolutely helpless. The support of the family fell upon the oldest daughter, who had tuberculosis at the time, but worked to provide the necessities of life for the others until she was too ill to stand on her feet. Because proper attention could not be given her in the home, and there were no funds for treatment, she soon died. The burden was then taken up by the second girl, who had contracted tuberculosis from the mother in the meantime. She worked bravely, while she was daily looking death in the face, until her strength was exhausted and she was forced to give up.

This home has been wrecked by a disease that could have been prevented if taken in time. The mission of the Tuberculosis Christmas Seal is to prevent tragedies like this.

### R----- County

A family of five—father, mother, two boys and a girl. The father, who was a mill worker, had been unable to save anything from his labor to provide against sickness. When taken ill with tuberculosis, the mill owners for whom he worked gave him his home rent free. The family was not financially able, nor could they secure assistance, to send the

father to the Sanatorium for treatment. He lingered several months and died, but not before he had infected all the other members of his family. The two boys are now in need of treatment. Unless it is provided, they will follow in the footsteps of their father, and, likewise, not before they have infected a number of others.

Sufficient funds were raised from the seal sale last year to send the girl away for treatment for a few months. If every one in the town in which these patients live had purchased the small amount of five Christmas Seals, all of these lives could have been saved, because the funds so raised would have been sufficient to provide treatment for all.

### I----- County

The following case demonstrates clearly the vicious attack tuberculosis will make on a family. It not only kills the first one infected, unless properly treated, but leaves in its wake a toll of death for years to come:

A woman tenant, whose oldest child is a girl fourteen years of age, has seen the grim reaper take member after member of her family, and now she, the last bread-winner of the family, is stricken. A few years ago the oldest brother developed tuberculosis and died. There was no recurrence of tuberculosis in the family for a year or two; then a sister was stricken and died. Six months later another brother was claimed. Just last year her husband and father died of tuberculosis. A few months ago two other sisters were the victims. There are at present six children, the oldest, as stated, being fourteen years of age, the youngest eighteen months.

Tuberculosis is not hereditary, and yet seven members of one family have died in a few years, and the other seven will follow unless something is done. Tuberculosis, however, is communicable, and unless those infected are taught how to live, they will continue to spread death in their wake.

### E----- County

There is a family in this county, consisting of mother, father and two children, in which the father is help-

less from tuberculosis of the spine. The family has no income and is dependent on charity for support. There is not as much danger of direct infection of the children here as in the other cases cited, but children are especially susceptible to tuberculosis, and more so if they do not receive the proper nourishment.

Receipts from the sale of seals can be and are used in cases of this kind to provide the necessary food for the

children. The only limit to the work is the amount available.

These few cases reported, out of the hundreds that come to the attention of the North Carolina Tuberculosis Association, are typical of conditions that exist in every county in the State. As long as we have these sources of infection, tuberculosis will continue to take a heavy toll. A few dollars spent in time will save lives and prevent sickness.

## X-RAY STUDY OF TUBERCULOUS LUNGS

THOMPSON FRAZER, M.D., and JOHN D. MACRAE, M.D., Asheville

(Extract from address before the Medical Society of the State of North Carolina, Winston-Salem, April, 1922)

Although the employment of X-rays in the diagnosis of chest affections has been a recognized procedure for many years, the significance which should be attached to X-ray findings seems to be unappreciated by the profession as a whole.

The questions that are frequently asked are:

(a) What is the value of X-rays in the diagnosis of tuberculosis?

(b) Is it necessary that they be employed in order to establish a diagnosis?

(c) If not, why should the patient be put to the additional expense which their use entails?

(d) Do X-rays supply any information that cannot be obtained by other methods of examination?

(e) Are the findings in accord with the results obtained by physical examination of the chest?

(f) If not, to which should the greater importance be attached?

(g) Will the X-rays supersede the older methods of examination?

It seems to us that rather definite answers can be given to all of the above questions:

(a) The employment of the X-rays is a procedure of inestimable value in the recognition of tuberculosis.

(b) In many cases, perhaps in most cases, the use of the older methods, history-taking, physical examination, and examination of the sputum may suffice to establish a diagnosis. These methods, most available and most important, should never be neglected.

(c) The additional expense involved in making stereoscopic plates is fully justified, in that one obtains

a more complete clinical picture of the individual case. Secondly, because we are furnished with a permanent graphic record which may be compared with subsequent plates.

(d) X-ray plates do frequently disclose conditions which are not discoverable by older means.

(e) The findings as revealed by the physical examination of the chest and by the X-ray plates are frequently not in strict accordance. Not uncommonly the roentgenoscopic examination reveals more evidence of pathology than would have been suspected from the physical examination alone.

(f) The information supplied by X-ray plates should be looked upon simply as so much additional evidence which must be properly evaluated. Under no condition should the results of the physical examination be disregarded, nor a final diagnosis be made on the plates alone.

(g) The X-rays, therefore, will not supplant the well-recognized methods of examination. The roentgenologist, however, should go his full length in describing the lesion. He should make a diagnosis and express a prognosis from X-ray findings alone, his unbiased opinion being unaffected by any knowledge of the physical findings. A correct value must be placed on the changes in the plates; the overlooking of the slightest changes and the reading of too much into the plates being the chief danger to be avoided. There should then be a conference between clinician and roentgenologist, after which such changes may be made in the conclusions as may be indicated by the joint findings.

### NEGLECT

You may be inconvenienced by the loss of your horse or your automobile if you have left the doors open to thieves, but there is always a chance you can recover your stolen property; however, when for lack of sanatorium facilities or proper treatment a person dies of tuberculosis—he is gone, and no amount of anti-tuberculosis work can bring him back. You might be justified in taking chances on leaving your stable doors open, but failure to provide sanatorium facilities is an inexcusable neglect.—From Bulletin, Ohio Public Health Association.

### BUY TUBERCULOSIS CHRISTMAS SEALS

North Carolina Tuberculosis Association,  
Sanatorium, N. C.

I am interested in checking the spread of tuberculosis and wish to aid in the fight by purchasing\_\_\_\_\_Tuberculosis Christmas Seals at one cent each, for which I enclose \$\_\_\_\_\_. Please send seals by return mail.

(Name)\_\_\_\_\_

(Address)\_\_\_\_\_

(SEND MONEY ORDER, CHECK, OR CASH)

### BUY TUBERCULOSIS CHRISTMAS SEALS

# DEATHS FROM TUBERCULOSIS

IN NORTH CAROLINA IN 1921

**2641** RATE PER 100,000 **101.0**

COUNTY	Actual Number Deaths			Rate Per 100,000	COUNTY	Actual Number Deaths			Rate Per 100,000
	White	Colored	Total			White	Colored	Total	
Alamance	17	14	31	92.5	Johnston	12	13	25	50.4
Alexander	4	3	7	57.2	Jones	0	2	2	19.9
Alleghany	5	1	6	80.0	Lee	2	8	10	73.7
Anson	7	15	22	76.6	Lenoir	8	9	17	56.8
Ashe	9	1	10	47.0	Lincoln	3	0	3	16.0
Avery	4	0	4	37.8	Macon	7	0	7	53.6
Beaufort	7	28	35	111.4	Madison	17	0	17	83.5
Bertie	6	24	30	123.4	Martin	7	19	26	123.2
Bladen	1	20	21	104.7	McDowell	13	0	13	76.5
Brunswick	4	6	10	66.2	Mecklenburg	33	53	86	105.3
†Buncombe	291	73	364	560.1	Mitchell	3	0	3	26.3
Burke	22	6	28	118.6	Montgomery	3	5	8	54.0
Cabarrus	17	16	33	96.5	Moore	14	7	21	98.9
Caldwell	15	5	20	98.7	Nash	20	23	43	103.4
Camden	3	2	5	92.2	New Hanover	17	36	53	128.7
Carteret	8	4	12	77.0	Northampton	5	17	22	93.6
Caswell	3	12	15	93.9	Onslow	3	10	13	87.3
Catawba	11	6	17	49.6	Orange	5	12	17	93.7
Chatham	5	6	11	45.4	Pamlico	2	1	3	32.7
Cherokee	7	0	7	45.3	Pasquotank	4	24	28	157.5
Chowan	4	5	9	83.4	Pender	1	16	17	113.5
Clay	1	0	1	21.3	Perquimans	6	6	12	106.3
Cleveland	9	8	17	49.1	Person	7	20	27	140.5
Columbus	8	11	19	62.2	Pitt	10	28	38	82.2
Craven	7	28	35	119.0	Polk	4	2	6	67.0
Cumberland	13	20	33	92.9	Randolph	12	7	19	60.7
Currituck	3	1	4	54.3	Richmond	4	23	27	104.3
Dare	1	0	1	19.2	Robeson	14	23	37	66.8
Davidson	12	5	17	47.6	Rockingham	18	21	39	87.2
Davie	2	3	5	32.9	Rowan	10	20	30	67.2
Duplin	20	7	27	88.2	Rutherford	19	11	30	94.2
Durham	22	56	78	182.3	Sampson	18	20	38	104.1
Edgecombe	5	33	38	98.7	Scotland	5	18	23	145.5
Forsyth	31	95	126	161.1	Stanley	6	2	8	23.8
Franklin	4	17	21	70.0	Stokes	6	5	11	52.7
Gaston	15	11	26	50.1	Surry	18	3	21	63.8
Gates	3	10	13	121.7	Swain	5	0	5	37.2
Graham	2	0	2	40.5	Transylvania	4	0	4	42.3
Granville	7	16	23	84.5	Tyrrell	2	0	2	40.7
Greene	5	11	16	97.4	Union	12	29	41	112.6
Guilford	46	41	87	108.3	Vance	10	21	31	134.2
Halifax	12	38	50	112.7	Wake	30	61	91	119.5
Harnett	10	14	24	83.6	Warren	3	17	20	91.5
Haywood	8	2	10	41.9	Washington	3	2	5	43.2
Henderson	15	5	20	108.3	Watauga	4	0	4	29.2
Hertford	22	18	40	169.6	Wayne	16	57	73	165.1
Hoke	*18	9	27	227.3	Wilkes	10	6	16	48.4
Hyde	5	1	6	70.6	Wilson	6	38	42	118.00
Iredell	13	18	31	80.4	Yadkin	11	1	12	72.3
Jackson	7	0	7	51.6	Yancey	4	0	4	26.1

Figures in red are for counties with death rate above the average for the state.

† Includes deaths in U. S. Government Hospitals and out-of-state patients temporarily living in Asheville.

\* Includes deaths at State Sanatorium.

‡ Includes deaths at State Asylum.



# The Death Rate in North Carolina from TUBERCULOSIS

has been

## Cut in half

in the past eight years



DEATHS  
1913  
4800

DEATHS  
1921  
2641













